



Ships **AND SHIP MODELS**

**MODELLING
'BLUENOSE'**

SEE INSIDE —

JUNE 1956

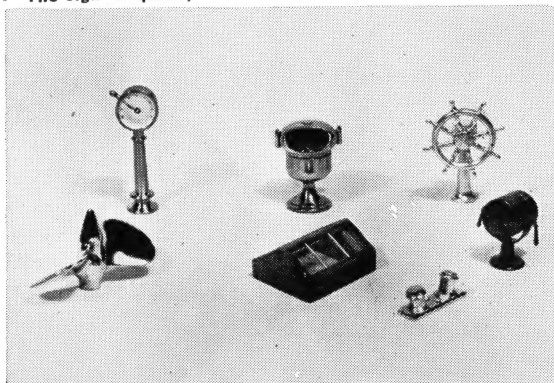
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Ship model enthusiasts from all over Britain get together for this great annual event. The Competition Section is open to all amateurs and there are a number of cups and medals to be competed for in addition to diplomas, cash vouchers and workshop equipment. Of particular interest to ship modellers are the:

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Steam and motor ships of any period (non-working); working steamers (power driven prototype vessels); sailing ships of any period (non-working); working yachts and sailing ships; hydroplanes and speedboats. Miniatures, length of hull not to exceed: 9 in. for $\frac{1}{4}$ in. to 1 ft. scale or larger; 10 in. for $\frac{1}{8}$ in. scale; 12 in. for 1/25 in. scale; 15 in. for 1/32 in. scale. No limit for smaller scales.

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For any type of model or mechanical work by a junior under the age of 16 by August 22, 1956.

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Awarded for any piece of model engineering work made collectively or individually by a class or member of a class of any school or technical college, or by a full-time engineering apprentice. The exhibitors (or exhibitor) must be under the age of 18 on August 22, 1956.

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OTHER AWARDS

In addition to the above, there are numerous awards to be competed for. These include Model Engineer National Awards, cups and prizes donated by Friends of the Exhibition and Percival Marshall Cash Vouchers.

Entry forms and information from Exhibition Manager, 19-20, Noel Street, London, W.1.

THE FINAL DATE FOR ENTRIES IS :

Monday, July 16th

Ships **AND SHIP MODELS**

INCORPORATING MODEL SHIPS & POWER BOATS

Vol. IX. No. 101. JUNE 1956

THE SHIP'S LOG

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SHIPS AND SHIP MODELS is always on the lookout for first rate illustrated articles, and readers are invited to submit contributions. Constructional details of ship models of all types are required and articles relating to model yachts and yachting. Manuscripts should be sent to the Editor, with stamped envelope for return if unsuitable.

THE MODEL ENGINEER Exhibition is rapidly approaching and those readers who are entering for it are advised to push ahead with their work so that it is fully completed at last two weeks before the closing date.

To have the model finished a little time before it is absolutely essential is always useful, as it affords an opportunity to correct any minor faults.

There are some who do not enter their models for the Exhibition because of a slight inferiority complex caused by the outstanding excellence of the work of leaders in the pastime. Unfortunately, this complex is liable to be exaggerated as most of us have a strong streak of self-criticism in our mental make-up and a too-hasty comparison with an exceptional model is likely to lead to an inaccurate assessment of one's own efforts.

This outlook, although understandable, is a wrong one, and one that should be ignored completely. Granted, a model may be below the level of the Silver Medallist (though the judges may easily think otherwise) but, everybody has start to some time.

This year's so-so entry will not be wasted—the lesson learnt through comparison and by the judges' impartial criticism must almost inevitably result in a next year's Highly Commended. The closing date is July 16 and entry forms may be obtained from this office.

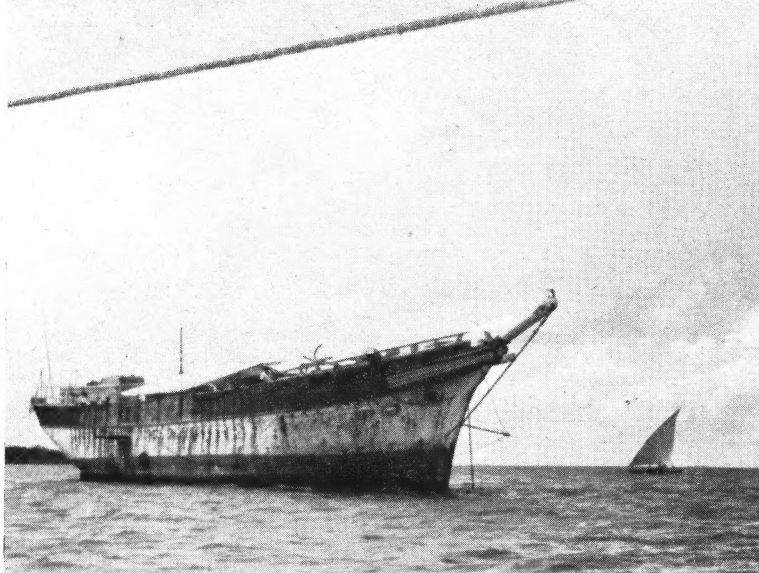


The Grand Banks schooners have always been a popular subject for the ship model maker and we are continually being asked for plans and instructions for building them. E. J. March, who is already well known for his classic books on sailing trawlers and drifters, has prepared a short series of articles on building a model of the famous schooner, *Bluenose*. The first instalment appears in this issue.

Bluenose was one of the finest of the fleet and those who remember the film "Captains Courageous" will recall the thrill of seeing these large schooners with their 70 ft. main booms and their towering clouds of canvas, and will remember the marvellous skill with which they were handled.

Properly designed and with a deep keel to suit the big sail plan, they would give a good account of themselves and would make a perfect picture in a good breeze.

The present series describes a water-line model of the actual ship, but if the builder wishes to sail his model he could, of course, design a suitable under-water body with a deep keel to match the big sail plan. Our cover picture gives a good impression of *Bluenose* at speed.



Left: The rigged-down hull of *ATTIYATHUR RAHMAN* at Male

Right: "Fill your boots, boys!" A peep in the brig's midget galley

Extreme right: The old-fashioned windlass on the brig

ATTIYATHUR RAHMAN

ALAN VILLIERS describes an involved piece of detective work in tracking down a Maldivian brig.

Although the ship was finally located, the search ended in a severe disappointment

IT IS CURIOUS how you always have to go and find out things for yourself—even matters which ought to be common knowledge among those who are interested, like the fate of the lovely Maldivian brig *Attiyathur Rahman*.

I'd seen that beautiful brig, with her lines like an old opium clipper's and her well-kept decks and graceful rig, in Colombo Harbour many a time over the years, and so had most other seafarers who were ever in the Australian or the Far East trades. She was a well-known and famous vessel and once a year, she brought the annual "tribute" from the Sultan of the Maldivian Islands to present to the British authorities in Ceylon.

The Maldives were—and are—a British Protectorate, and the handing over of the annual tribute was a colourful ceremony which marked this connection. That was not all the lovely brig did. She was the flagship in the Maldivian sailing fleet—a fleet of buggalows (same word as the Arab baggala, and same hull-form and same rig), one brigantine and this one

brig which helped to maintain communications between the Maldives and Colombo and Galle, in Ceylon. As such, she sailed the year round, generally between Malé (capital of the Maldives) and Colombo direct, with an occasional and much longer voyage from Malé to Calcutta.

You would imagine that if such a ship dropped out of existence, her absence would at least be noticed in Colombo. For a year, I tried to find out whether the *Attiyathur Rahman*—don't be frightened by the name: it is really *Attiyath-ur Rahman*, and it means something like the "Glory of Mercy"—was still in existence. I found various mariners who said they had seen her in Colombo a few months ago, a year ago, five years ago, last week, so I wrote round.

I found out nothing except that there was such a brig. I knew that well enough already! I didn't know then that the Maldivian Government has an office and an Ambassador in Colombo. That's the kind of thing you have to go and find out. I had a friend who was to pass through Colombo on his way to Japan, but all

he could find out was that the brig was still in existence. He saw the Maldivian brigantine beating into Colombo Harbour, and making a fine job of it—but it was the brig I wanted.

The *Attiyathur Rahman* was the last pure brig in the world, as far as I know (and I really ought to know something on the subject by now, because I'd been looking and learning for quite a few years) and so I wanted to get a record of her while she was still sailing.

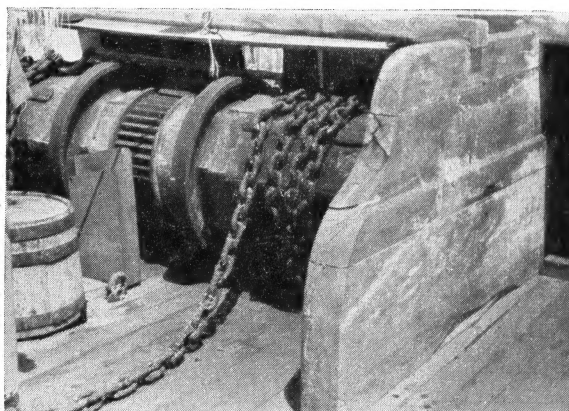
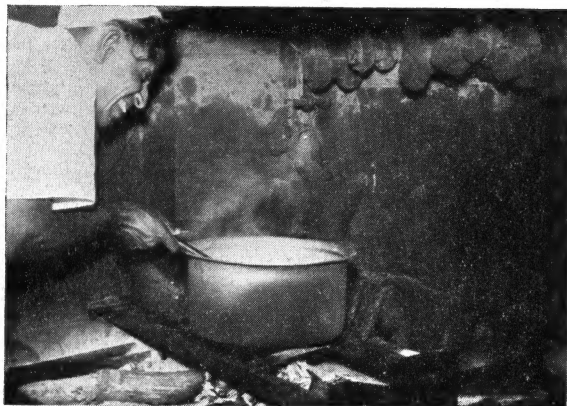
Early this year the chance came to go to Goa and Daman and Diu, the Portuguese provinces which border the Union of India. Going that far, it seemed common sense to pass on towards the Maldivian Islands by way of Colombo, and find out about that brig. It was a long way round, I found, but I went. It was a long way because the only way to get to Goa was to fly in by Portuguese Airlines from Karachi, in Pakistan, and to get on to Colombo it was necessary to fly back again to Karachi first.

Enter the buggalow

The first thing I did when I reached Colombo—you see nothing from an aircraft, I had an aisle seat and it was night anyway—was to look in the harbour for the masts and yards of a brig, but all I saw were ocean liners and a few rough-looking ketches from Tuticorin in South India. They lay in a part of the harbour far from the passenger jetty, and in truth they did not look very interesting.

Beyond them, I could just make out the hoisted lateen yard on the mizzen of a big vessel, flying a flag I had never noticed before. It was red and green. I took a boat and pulled across towards this vessel and, when I came near, I saw she was a buggalow from the Maldivian Islands, loaded and ready for sea.

There was no sign of a brig, or the



hulk of a brig anywhere and I made enquiries among friends ashore. They hadn't seen a brig in years. I went to Jaffna up in the north of Ceylon, which used to sail a considerable fleet of square-riggers (brigantines and barquentines, mostly) in the Indian trade and across in the rice trade to Burma. There was not a single large sailing-ship in Jaffna, of any kind, and the customs officers told me they were a thing of the past there. I went to Negombo, not far from Palk Straits, and I saw some handsome elephants building a sea wall, and a lot of fishing craft—but no brig.

I went to Galle, in the south, and there were six or seven small sailers in from the Maldives, trading. They were fore-and-afters, some with a big square running sail on the fore. None could, by any stretch of the imagination, be called a square-rigger. Not a single Indian brig had been in Galle for years and, as far as the Master Attendant knew, none were left—anywhere.

See for yourself

Lots of Indian sailers came to Galle but they were small fellows, bringing Malabar tiles. There was one in port of the same rig as the Tuticorin ketches I had seen in Colombo and she looked about as interesting as a sailing lighter.

But, at last, I tracked down that Maldivian Government office in Colombo, and there I found the brig was in existence, but sailing no longer. She was laid up at Malé, capital and port of entry of the Maldives, and she was to be repaired, they said. She was old and she needed a lot doing to her. In the meantime, buggalows were carrying on the trade, with the help of an occasional charter of a small steamship. Why not go down to the Maldives in one of the buggalows, and have a look at the brig for myself?

I got a passage in a smart buggalow (and a fine job she was—well built, stoutly rigged, with a master who could navigate properly and sail, too, and a fine crew of 21 men. She was just about the size of the *Mayflower* replica, so I watched her behaviour and her manner of handling with the greatest of interest) on the way down to Malé.

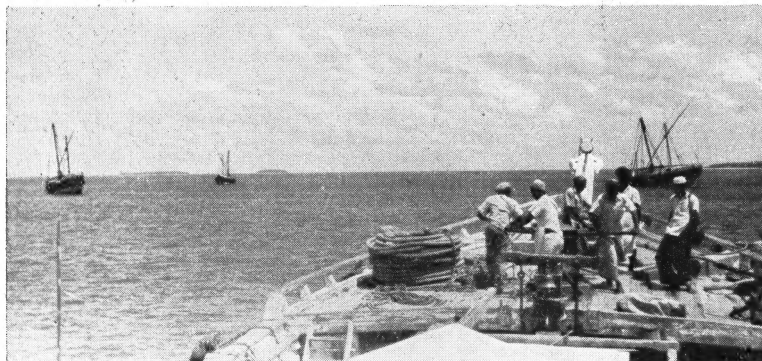
The buggalow belonged to the Government, as also did the brig and the brigantine. This was in February and the north-east monsoon was blowing. Malé is about 420 miles from Colombo over the open Indian Ocean and in the north-east monsoon, going there is a fair wind run. We were there in three days, but it is getting back again to Colombo that takes time—anything up to a month, even for as fine-lined and sharp-pointing a sailer as a lateen-rigged buggalow.

We came in by night, but the Nakhoda (master) of the buggalow pointed me out a light which he said was the brig's. Even in the bright tropic night, I could see she was rigged down. There was not a stick standing—I was too late. She had just been rigged down, but she had been lying idle in the lagoon at anchor off Malé for more than a year. "She had her masts and yards when I sailed, six weeks ago," said the Nakhoda.

Well, they were gone now. But he still said she was to be repaired. I found the masts and yards ashore on the beach, by the old stone walls of the ancient forts of Malé. She had been a true brig of the real old style, with everything shipshape and Bristol fashion—a bit stumpy in the rig of later years, when she had no royals,

The crew of a Maldivian buggalow relaxing in the sunshine





but she had big deep single top-gallantsails on both fore and main, and double tops'ls and courses.

She'd had a real outside spanker—I could see that from the length of the gaff and the boom lying on the sand—and she'd had a shapely nose full of big headsails. She must have been lovely under sail.

She was still lovely, lying out there in the lagoon under the hot sun, with no rigging at all. The grace and noble lines of the old wooden hull still shone, like a piece of good statuary. She lay by herself in the broad lagoon, where the only other vessels were three buggalows (200 and 300-tonners similar to the vessel I had come by) and the beautiful sailing fishermen of the Maldives which look so strangely like Viking craft, and the little inter-island dhingis with their swift lateen sails.

Elderly ship

The *Attiyathur Rahman* was pure brig, pure East Indiaman of British origin, one of those perfect ships which were built in the East usually to British order, as so many of the great East Indiamen once were. All her lines flew with perfect grace to cutwater or counter.

I sailed out to her and went aboard. She was coppered, but it was obvious that she was very old. She was not Maldivian built—none of those big ships was. She had been bought by the Maldivian Government many years before in Colombo, and she was elderly then.

She'd been rebuilt once, perhaps a quarter of a century before, at Chittagong in what is now Pakistan and it was obvious that she'd need rebuilding again now. She was very worn, though her timbers were teak and her decks and deckhouses were still good. She'd have to be beached (there are no dry docks there) and practically rebuilt. She'd need some new masts and spars,

too, and new sails. She really ought to have an auxiliary if she were to continue usefully in modern trade.

After all, she had sometimes been able to make only two round voyages a year from Malé, one to Calcutta and one to Colombo and this was really very little. She needed a big crew and she did not carry very much, being a passenger vessel as well. Unlike the lateen-rigged ships, she did not point up so well, and so she sometimes took a long time to make a passage against the monsoon.

If she were to be any use at all, she *had* to sail against the monsoon on one leg of each voyage—it was quite uneconomic to think of running to Colombo in the south-west and then waiting for the north-west to blow her back again.

It was very interesting to be aboard. She was the old-fashioned forecandle of the clipper days, with no headroom, in a sort of hutch below the deck of the forecandle head, where two tiers of rough bunks lined the ship's side and the wet and muddy cable lay on the deck between the berths. There were not berths enough for all the mariners.

Watch below slept; watch on deck took their turn after eight bells and boys slept on the deck where they could! The galley was a little house on the fore deck, and there was a cook on board who was still operating in there with a wide fire.

Officers lived in spacious quarters in a fine deckhouse aft, all in first-class order and ready for use. Here there were a bathroom and a real lavatory, such as I had never seen in any dhow. The after-cabin was light, airy, and inviting.

The brig had the old-type up-and-down windlass with three turns of the cable round the wooden barrel, and the cable stowing on deck. Deadeyes for the lanyards to set up the standing rigging were still in place. The wheel aft was in good order: the compass was the old tell-tale, lighted from the master's cabin and so arranged that he could always read the compass course as he sat or stretched out.

Economics of shipping

There was a boatswain's party aboard, caring for the brig. She was to be hauled up on the beach inside the coral breakwater, the boatswain said, at the next high tide. To be rebuilt? I asked. He didn't know; he hoped so.

But the Prime Minister told me later that she would not be rebuilt. Her days were over. To rebuild her would cost the best part of 150,000 rupees, which was twice the sum originally invested in her. The Maldivian sailing fleet, he said, was down to one brigantine (away on a Calcutta voyage: her name is *Fath-ur Bahr*) and three buggalows.

They could no longer obtain necessary buggalow replacements; the Indians had stopped building them and there was no timber large enough in the Maldives for that type of ship. So he was very sorry, but the poor old brig would have to go and be replaced, in due course, by a motor-ship. ⚓

Above: Three buggalows in the lagoon at Male seen from the brig's fo'c'sle

Right: The brig's crew taking it easy. The gentleman on the deck has a Spartan idea of comfort!



Building an early Sixth Rate

R. J. COLLINS continues his instructions for making a period ship with details of the decks, masts and guns

IN EARLIER PARTS of these constructional notes, most of the work was concerned with the exterior of the ship. Now the time has come to move inside, as it were.

On the main deck is the manger—a wooden wall 3 in. thick and 3 ft. high stretching from side to side just abaft of the hawse-holes. This was to catch the water from the cable when being hauled in. There would be a channel or pipe leading from this to the scupper in the side of the ship but I have not shown this. The manger wall would probably be painted red on the outside, and tarred on the inside (Fig. 40).

The fore sheet bitts serve a double purpose. Stretching down from the

fo'c'sle deck the bottom part serves to hold the step of the bowsprit, so fix these bitts in very firmly. The uprights are 5 ft. 6 in. apart outside, and are 8 in. square. The cross-piece is 7 in. square and 7 ft. 6 in. long. Beneath the cross-piece and held in position by the two uprights is the step of the bowsprit.

The top of the bitts really belongs to the description of the fo'c'sle deck but they have to be made in one piece so I will deal with that part of them here. The top, which is carved to the shape of a head, is 2 ft. 6 in. above the deck. Between the cross-piece and the deck is a sheave. There is a similar cross-piece to the one below, 1 ft. from the deck. The head is gilded, the rest black (Fig. 41).

Immediately aft of the mast are the



fore jeer bitts, identical with the sheet bitts but without the step of the bowsprit. In each case the cross-piece is on the side away from the mast.

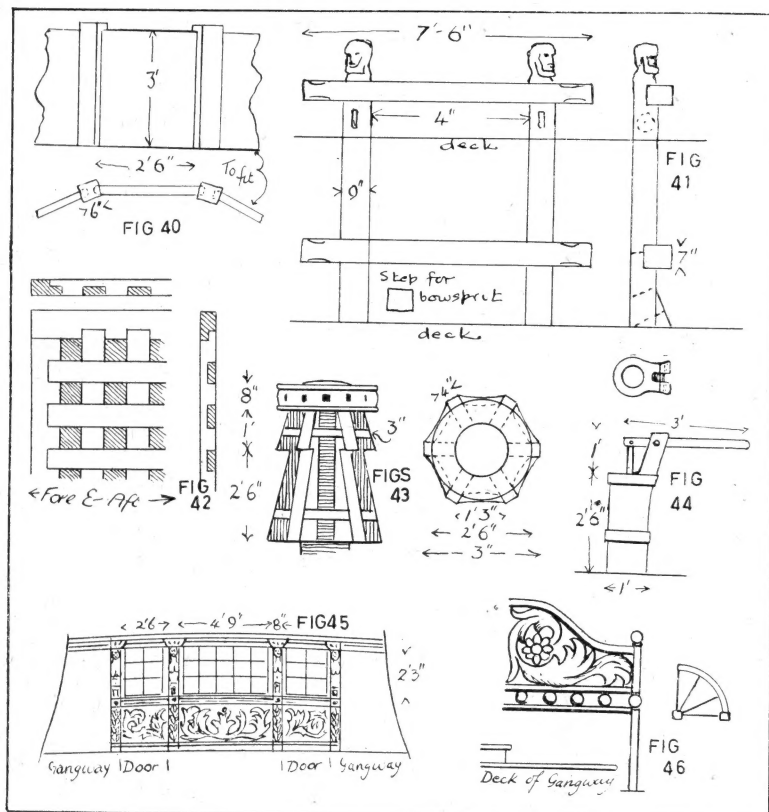
Hatches and coamings

Down the middle of the deck are the openings for the hatches, etc., 5 ft. 6 in. across. These are surrounded by coamings which are 6 in. square with a 3 in. step cut out inside to take the edge of the gratings. In the solid-based model all these openings are covered, but it is a good idea to paint them with a matt black paint to give the impression of depth through the holes of the gratings. In the timbered model one or two are left clear. The gratings are shown in Fig. 42, and it should be noted that the unbroken slats should run fore and aft.

Near the forward end of these hatches is the capstan. It will be seen that it has broken away from the old design as used in the *Prince 1670* model but has not yet become the broad type of the later period. I found the best way to make a capstan was to turn the drum head, barrel and chocks in one piece and add the whelps afterwards. After the whelps have been glued in, the chocks are shaped to suit (Fig. 43). It can be painted red or black, but I should think red is the better colour.

The main sheet bitts are like the top parts of the fore bitts. They rise 2 ft. 6 in. above the deck and all the other measurements are the same as for the fore bitts.

A little further aft are the pumps, one either side. These are suction pumps and consist of a wooden pipe



Building an early Sixth Rate . . .

cut at the top so as to make bearings for the handle controlling the plunger. They are not exactly upright, as the foot goes into the well which is a channel by the side of the keelson. On most of those shown on models there is no spout but there probably was one about halfway up on the prototype. The water would spill out on to the deck, from whence it would flow clear via the scuppers. The metal bands can be made of paper and the whole is painted red (Fig. 44).

On each side of the mast, on the deck, are three ring bolts, about 18 in. from the mast and about the same distance apart. Aft of the mast are the jeer bits which are identical with the sheer bits.

Quarter deck bulkhead

Under the commencement of the quarter deck is the quarter deck bulkhead. The sizes are given in Fig. 45 but it would be safer to make a cardboard template first. If there is any difference let it come at the outer edges. Its making is quite straightforward—thin wood, Perspex windows with the frames let into them and the

pillars of carved figures. The outside base is black with the figures and framing picked out in gold and the inside surface is red.

On each side of the quarter deck is a companionway and a rather elaborate one at that! A step leads down from the deck to the gangway which is 2 ft. 6 in. wide. At the forward end is a four-step spiral staircase which I cut from a quarter-round and I made no attempt to hollow out the back which I painted black. The inboard edge of the gangway has an elaborate rail which connects up with the rail of the quarter deck.

The one I have shown in Fig. 46 is in the style of the one on *Prince* but I have no wish to lay the law down on these matters, so any design in the same general manner will do. In the one shown, the uprights and the top and bottom rail are wood, the rest is built up with card. The back of the stairs is also guarded by a similar barrier ending in a post. Although I have described the gangway now, so as to keep the sequence, it would be better to fix this after the gun which goes below the gangway is in position.

The rails are gold and the face of the stairs can be red or black.

At each side of the gun ports is a pair of bolts. The top one is an ordinary eye-bolt and is for the out-hauling tackle for the gun. The bottom one is a ring bolt and is for the breaching rope (Fig. 47).

Details of the guns

The guns (Fig. 48) along the main deck are demi-culverins, and Keltridge states that they are 6 ft. long. Normal demi-culverins were 9 ft. For the barrel I have kept to the (roughly) usual dimensions of the muzzle being twice the bore and the breech three times the bore, which for this gun was $4\frac{1}{2}$ in.

To come to actual sizes for a moment, $\frac{1}{16}$ in. actual equals $4\frac{1}{2}$ in. scale so I think that a $\frac{1}{16}$ in. drill will do for the bore and that the barrel can be turned from $\frac{3}{16}$ in. brass or wood. I don't know whether the guns were brass or iron, but I am inclined to think they were brass—in any case I would make them so here. If you make them from wood I suggest you gild them.

The trunnions were the same diameter as the bore and were so placed that the top of the trunnion was level with the centre of the gun barrel. Naturally the best way to make a gun barrel is to turn it on a lathe, but if you do not own one of these useful machines they can be made on a "poor man's lathe."

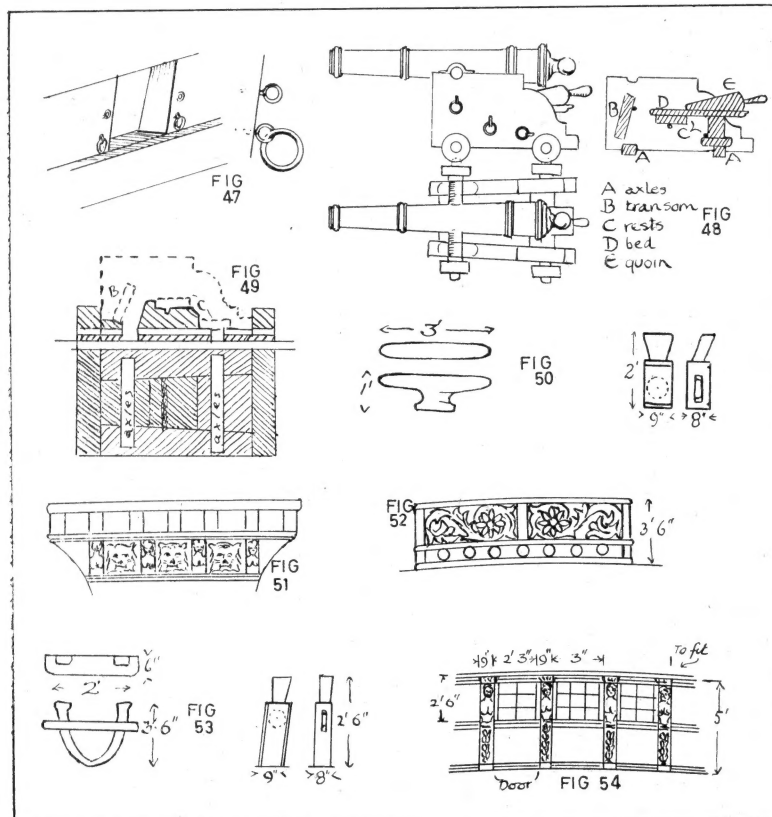
Obtain sufficient material and cut it into lengths about $\frac{1}{2}$ in. longer than two barrels. Clamp a wheel brace in a vice in such a way that it can be revolved and grip the material to be turned in the chuck. It is more convenient to get someone to turn the handle while you work on the job.

The guns were right

The best tool for this I have found to be a file which is used on the work as it revolves. Some sort of pattern or template is needed to get them all the same but the job can be done—and done well—in this manner. In one of my earlier models I made 76 small guns in this way. Whatever I think of that model now the guns are still all right!

The trunnions I "cut in" from the bottom as it is so difficult to drill off centre. They can be soldered in, or held, as mine are, with one of the metal plastics. Once assembled there is very little need for strength.

The carriages, 20 of one size and six of the other, are best built on the conveyor belt principle. Two templates of tin or brass are made of the side (which is called the cheek) and strips of wood of the correct height are cut across alternately straight and



diagonal to make the blanks. Two or four blanks are held between the templates in a vice and the cheeks shaped with the help of a fine saw and a file. Keep each pair together to make sure that they match.

There are other ways of making these—using a milling machine, for instance—but I prefer to take for granted a lack of elaborate tools rather than an abundance thereof. Other pieces of the carriage can be cut from strips. The eye bolts, which run right through from side to side, are made from thin wire and help to strengthen the job. The wheels, or trucks, are made from red knitting needles. I assemble the carriage on a small jib (Fig. 49) and the whole is painted red.

Mounting the barrel

The barrel is placed in position and tied down with very fine wire threaded around the trunnions and the fore axle. This is scarcely noticeable but I think is essential, as it is so easy to knock a gun from its mounting after everything else has been finished. The trunnion cap is a piece of paper glued on and painted red.

When the whole assembly is completed, cut small blocks of wood which will fit exactly between the rests and the deck. Glued into position these will hold the guns in place. I always put on the large breeching rope which not only adds to the appearance but serves for additional security. This rope is 5 in. and I make mine from white cotton for effect, although they were probably of the normal colour. The ends were seized to form a loop which holds the ring of the ring bolt and the middle was opened to simulate a cut splice in which is held the button of the gun.

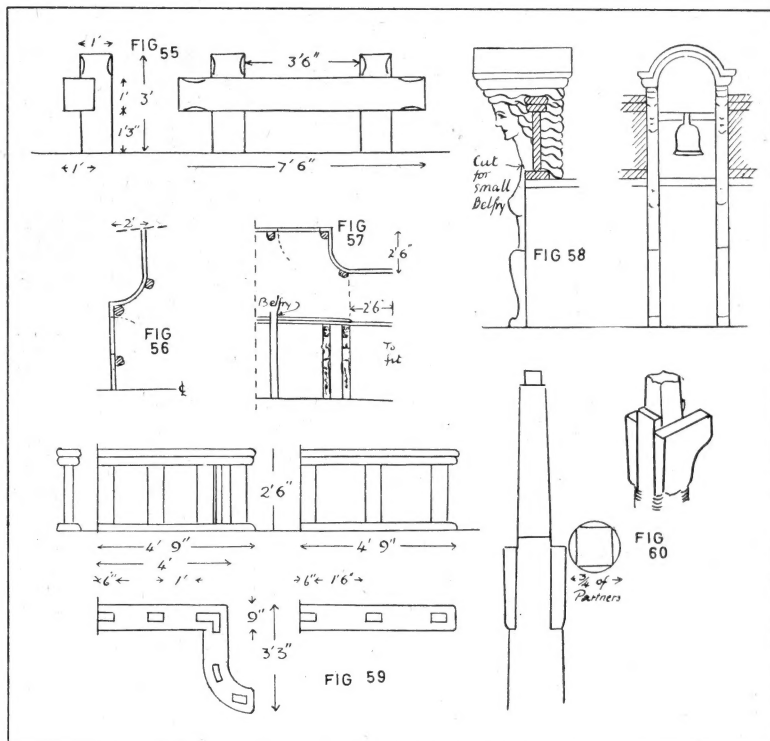
Bolts and cleats

The rope must be long enough to allow the gun to run back at least a foot clear of the port. When the gun is run out, as it will be in the model, the slack of the rope must be taken up in some way around the back of the carriage.

Various ring bolts in the deck will be referred to when we deal with the rigging. At each side of the hull are two large cleats, one between ports three and four, and the other between ports four and five. A small, differently shaped cleat is placed rather high between ports two and three. The exact placing of these cleats is shown on the diagram of the inboard works. Cleats are shown in Fig. 50.

The beakhead bulkhead is similar in design to the others but with perhaps a little more gilded work (Fig. 51).

Tight against the base of the forward rails is the beam of the cathead and should be painted black. The jeer



and sheet bitts have already been described.

On the quarter deck the rail joins on to the rail of the gangway and should be in keeping with that, if you have built up a design of your own. I have shown one in Fig. 52. A small grating, 4 ft. square, is let into the deck (but not flush, say about 2 in. high) to provide light and air below. A kevel forward of the first gun port and is located between ports one and two on each side of the deck (Figs. 53 and 58) and a knight head, with sheave, is between ports two and three. All are painted red.

The bulkhead of the cabin has a door to one side and the usual windows (Fig. 54). Again, make a template first. This bulkhead should be painted the same colour as the other inboard bulkheads and the carvings are gilded. A knee is fixed in the middle of the poop deck, shown in the inboard works.

Guns on the deck

I mentioned six guns for this deck but it would be quite in order to put four only. These are three-pounders and should be 7 ft. long but I have shortened them to 4 ft. The bore is 3 in., the muzzle 6 in. and the breech 9 in. The length of the carriage is the same as from the trunnion to the button and the thickness of the woodwork is the same as the bore. The

carriage to be built so that the gun centres in the gun port.

As arranged, I visited the Pitt Rivers Museum at Oxford and examined the model there. It differs in a number of respects from the one I am describing but as I have documentary evidence for most of my model, please do not think that it is wrong.

The most important thing I checked was the position of the riding bitts (Fig. 55). These have no supporting brackets or knees and stand about 1 ft. 6 in. forward of the hatchway openings. The three pieces of timber are all 1 ft. square; the overall measurements are the same as for the main bitts.

In the contemporary model there is a fo'c'sle bulkhead, in this one none. The quarter deck bulkhead is also different to the one I have already shown. I give a sketch (Fig. 56) of it for those who would prefer it as an alternative. The fo'c'sle bulkhead would be the same as this but without the windows and, of course, not so high. In this case the deck would be shaped to fit, and the centre carvings would be elongations of the belfry cheeks. The quarter deck remains square irrespective of the type of bulkhead (Fig. 57).

I have decided to leave out the whipstaff entirely. After all I am in good company as I do not know of

Building an early Sixth Rate . . .

any contemporary model that has one but if any of my readers knows of one I shall be very pleased to hear about it.

I have shown the belfry (Fig. 51) with the long base which is to be used if a bulkhead is fitted—the drawing shows how it can be modified if there is no bulkhead. As with the other carvings, the sides (or cheeks) can be cut from thick wood and then parted down the middle. In rounding out the carvings do not be afraid of cutting deeply. It is better to over-than to under-emphasise, even if it means simplifying the design a little.

The top of the belfry is cut from a thick piece of tight grained wood. The convex surface beneath was taken out with a round file and the upper surface shaped to fit. The moulding was cut with one of the cutters already used. On the contemporary model this roof was further ornamented with a pair of sleeping dogs. On a later model some leaf pattern was carved in relief, and these could easily be cut from card and glued on. I have not drawn these, but mention them in case you wish further to embellish the belfry.

Making the bell

The bell itself is turned from brass. The roof is 3 ft. square and 4 ft. high overall from the deck. The cheeks are 2 ft. 6 in. wide at the top. Battine gives them as 3 in. thick but you will find this very thin and I think this is one of the few places where it is permissible to exceed scale—but not too much.

The whole is gilded but be careful

not to clog up the carving. This advice applies to all the gilding.

The fo'c'sle rail is quite low (2 ft. 6 in.) and is shaped to suit the end of the fo'c'sle deck but with a 2 ft. 6 in. clearance at each end. Cut the shape of the top capping piece from ply. As the rail is divided by the belfry, you will need six of these. Mark out the position of the upright timbers and cut holes for them right through four of the pieces. One pair of these is the base and should have the top corners smoothed off; the other pair is the lower one for the top, and must be narrowed slightly (and evenly) and all the edges smoothed off. The unslotted ones are the capping pieces and should also have the edges smoothed off.

Fitting details

Glue the two top pieces together and make sure they adhere for their entire length. Glue the uprights into the slots, fasten the base to the deck, touch the bottom of each upright with glue, and fit the entire section into position. See that it meets with the cheeks of the belfry and that the whole is really firmly fixed, as several ropes will be attached to this rail later on. The method of building is the same whatever shape your rail assumes. It is better to paint it black before it is fitted (Fig. 59).

I think this finally disposes of the hull and its fittings and if you examine it and find it good I suggest you put it aside in some dust-proof cover while you get on with the rest of the job.

The best wood with which to make the masts and spars is lance wood, but

this has been almost unprocureable in England for many years. The next best—so close as not to matter—is dugame (pronounced doo-gah-may) wood which is also known as lance wood and has been used in lieu of it almost since its introduction to this country. It gives a lovely satiny finish and has a long, straight, and very tight grain. Failing this, use a straight-grained wood, and it will help if you split off your initial pieces so as to make sure you work with the grain.

Making the masts

The lengths given here are, first, the overall length for those who are building the Navy Board model, and in brackets the height from the main deck for those who are not. The thickness is given at the partners, that is at the main deck level. The heel and the hounds should be three-quarters of this. The taper is not a straight one but an arc of a circle. The bowsprit tapers very slightly, the ends being about seven-eighths of the given size.

Bowsprit, 37 ft. 6 in. (32 ft. 6 in.), breadth, 12 in.; fore mast, 51 ft. 6 in. (41 ft. 6 in.), breadth, 17 in.; mainmast 58 ft. 6 in. (44 ft. 9 in.), breadth, 19 in.; mizen, which is stepped on the deck, 39 ft. 6 in., breadth, 12 in.

At the top of each mast is a square section known as the mast head. This is also cut smaller at the extreme top to fit into the cap. The base is a square that fits into, or is very slightly larger than, the diameter of the mast (this part is called the hounds). Its taper is the same as the rest of the mast. Length of mast head: fore 5 ft. 6 in., main 6 ft., mizen 4 ft. 9 in. (Fig. 60).

● To be continued

Engines aft in new designs

THE GROWING TENDENCY—particularly by foreign shipowners—to place machinery aft is resulting in a great diversity of new and original designs. This is most noticeable among specialist ships and those intended for liner service. Hitherto few fruitships of any size have had

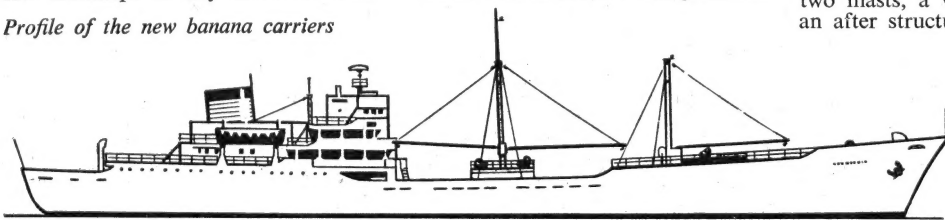
Profile of the new banana carriers

their engines aft, a notable exception being the 20 year old *Egyptian Reefer*. This lends added interest to the layout of the three banana carriers *Almirante*, *Aragon* and *Atenas*, built last year for service between the West Indies and the United States.

Each vessel is of 3,677 tons gross and

measures 377 ft. in length o.a. × 52 ft. mld. breadth and has a deadweight of 3,430 tons on a draught of 21 ft. 6 in. Their speed when carrying fruit is 15½ knots. Power is provided by a pair of 7-cylinder M.A.N. type engines which develop a total of 3,920 b.h.p.

As the profile shows the vessels are of handsome appearance, with two masts, a very long fo'c'sle, and an after structure which contains all the accommodation and finishes short of the stern. The engine room extends from a point beneath the radar platform to just abaft the buff painted funnel.





STEAM STILL SURVIVES

"STUDENT" traces the development of the steamers on the Thames and describes some of the engines. Although the end is in sight for the steam engine, there is the comforting thought that it will survive for some years yet

UP AND DOWN the Thames, from Oxford to Kingston, ply the 16 passenger steamers of the Salter Bros. fleet.

The story of the "line" began in 1886, when the first boat, *Alaska*, was introduced. She was followed by *Oxford*, a twin-screw steamer carrying 190 passengers, which made the run to Kingston in two days. In turn came *Kingston*, *Windsor* and *Cliveden*, and with these a daily service was maintained.

In 1896 came *Henley*, and *Nuneham* in 1898, each carrying 150 passengers on the Upper Thames run. Then, with the installation of machinery to build steel hulls, came *Reading*, *Sonning*, *Marlow* and *Streatley*, and with these a double service was operated on all runs. *Goring* in 1911 and *Wargrave* in 1913 were sister ships, each for 250 passengers.

A very good record was made in the first world war for building smaller vessels of all types, while *Kingston*, *Windsor* and *Cliveden* were sent to Mesopotamia. After 1918, a new *Hampton Court* and *Oxford* were built for the Upper Thames services, followed by *Mapledurham* and *Cliveden*, which carry 300 passengers each. The hull lines are notable throughout for their delightful sweep, and *Reading* is typical of all. She is of steel, but the earlier wooden hulls are equally fine, except that some have straight stems.

The boats vary in size. Thus, *Mapledurham*, of the late 1920s and *Cliveden* are 105 ft. long \times 16 ft. 6 in. in beam, others being 90 ft. \times 14 ft., and 85 ft. \times 13 ft. 6 in.

Most interesting, however, is the fact that 11 of the fleet of 16 boats are steam driven. Ten of the steam sets are of the non-condensing, triple-expansion type, nine being made by Sisson of Gloucester and designed for non-condensing operation. The other was not, however, but was later converted to non-condensing, while the compound is condensing still. The Sisson sets are superb and are beautifully kept and handled.

The photograph shows the cleanliness and polish attained and it will be realised that such a condition means considerable work outside running time—a real steam man's love and care. The engineer's handling before the trip began was a revelation. The engine was given a crack of steam with the starting valve and all drains open, until steam started to blow into the bilges. The reversing lever was then used to move the pistons up and down, at first only $\frac{1}{2}$ in. or so. Then, with more steam, the movement was increased so that in two or three minutes of handling by the reversing level only, she was over the centres in absolute silence, in startling



GRAND DUCHESS
glides smoothly
past one of the
magnificent
Thames-side
houses

contrast to the usual way of running too quickly over the centres.

Engine sizes vary with the vessels. The cylinder bores are about $6\frac{1}{2}$ - $8\frac{1}{2}$ and $10\frac{1}{2}$ in., the stroke being 7 in. This would develop about 80 horse power with steam at 180 p.s.i. and 360 r.p.m. The fine form of the hulls allows high revolutions to be used with good propulsive efficiency, speeds up to 10 m.p.h. being soon obtained where conditions permit.

The overall size of the engine is small; the height is about 3 ft. and the bed is about 3 ft. long and 18 in. wide. The thrust-block bearing is cast with the bed and the cylinders are supported by steel columns. The rear ones carry the supports for the lower ends of the rectangular steel crosshead guide bars, whose upper ends are supported by lugs cast upon the cylinder bottoms.

Crankshaft design varies, too. The earlier ones had much planer and shaper work about them, but the later ones were mostly finished in the lathe, often having the eccentric sheave formed upon one web of the crank. Since the Hackworth gear has only one eccentric per valve, the engine is very compact. The eccentric rod and strap are a bronze casting, the outer end being attached to shoes which run upon the slides of the reversing gear weighshaft.

Most of the later engines were fitted with piston valves and these greatly reduced the strain on the valve gear, which was usually of a radial type, but such gear was also used with flat slide valves. The valves can be at front, back or side of the cylinders with this type of valve gear. The engines of *Oxford*, *Cliveden* and *Mapledurham* are fitted with it.

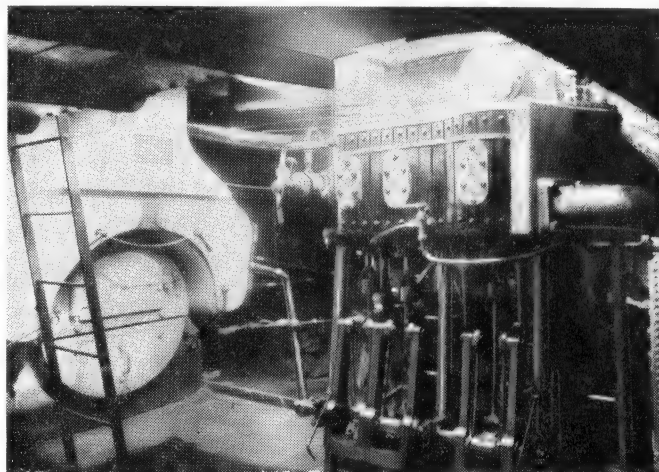
Sissons also used their own radial valve gear widely. This gear gives very good valve events, but the fixing pins need watching. The engines of *Majestic*, *Marlow*, *Reading*, *Sonning*, *Streatley* and *Henley* are fitted with this valve gear. *Henley's* engines are No. 501, dated 1896, her boiler having been renewed in 1929. The exhaust is led by a copper pipe to an expansion tank in the corner of the engine room, and so to the chimney, where it is almost noise-

less and invisible, since the expansion chamber reduces any pressure and separates condensed water, which is drained to the bilge. Non-condensing operation, although less economical, eliminates the noise and maintenance of air pumps and permits free use of cylinder lubrication, thus contributing to the smooth running of these sets.

So much for the Sisson triples, but there are two other steam engines, these being fitted to *Grand Duchess* and *Queen of the Thames*. These are much heavier jobs, of commercial type, equally suited for their present work, or tug or Naval boat service.

All the boilers are single-furnace Scotch type, with wet combustion chambers, coal fired, and about 5 ft. 6 in. in diameter, by 6 ft. long, working at 180-200 p.s.i. This robust type gives good service with reasonable care. River water is used for boiler


The comparatively small size of the Sisson engines can be gauged by this engine-room picture

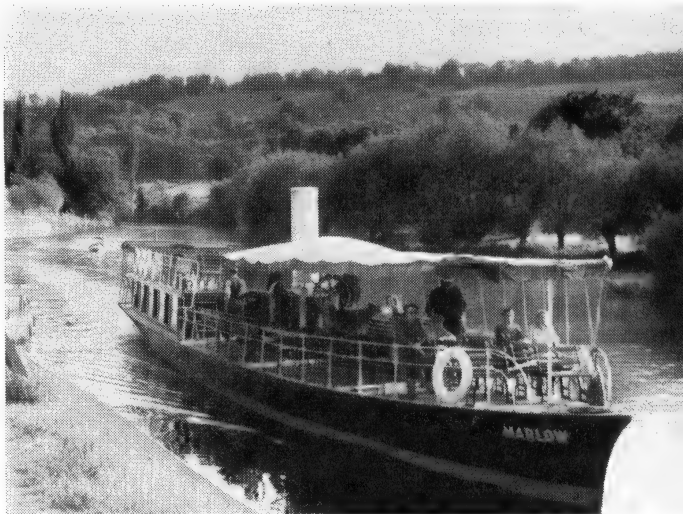


feed and here care is needed. It is a great temptation to pump up the boiler while in the locks to prevent steam from blowing off, but it is a bad time to do so, since the water is then muddy from the churning of the propeller and the lock working. Mud in the boiler causes rapid depreciation, and replacement of a boiler is a costly matter, since the price is high, delivery dates long, and installation expensive.

This question of boiler replacement probably governs conversions to diesel drive. The man-hours and fuel costs are much less with diesel engines, while with the company's fine maintenance, they are reliable enough.

Even so, it is good to know that during 1954 and 1955 no steamer went over to diesel drive. Unfortunately, however, the very high cost differences for fuel, etc., have now become a greatly increased burden upon the steam sets and this past winter, two more have gone over to diesel.

But it will be a long time before all will be oil engine driven and lovers of the steam engine will be able to voyage amid the quietness of the steamer, with its cheery smell of steam and warm oil, for some years to come. 



The delights of a Thames riverboat are captured in this picture of MARLOW at the upper reaches of the Oxford-Kingston trip

READERS' QUERIES • • •

Coupling for motor

I have a kit of the Wavemaster and a Taycol 6 volt electric motor and a brass tube and rod for the propeller. As this is my first attempt with a motor, I would be pleased if you could tell me how to connect the tube and rod to the motor.—G.D., Woolwich, London.

A popular method of connecting the engine to the propeller shaft is to obtain a spiral spring of suitable diameter and press one end on the engine shaft and the other on the propeller shaft, adding a touch of solder at each end. Another method is to have a flange with two pins engaging with a pin pressed through the propeller shaft.

Parma and Pamir

I am thinking of modelling the *Pamir* which I believe belonged to the famous "P" lines. Is she any different from the *Parma*—if so, in what way?—G.W., Sutton, Surrey.

There is a considerable difference between PARMA and PAMIR. PARMA had the usual open deck, whereas PAMIR had a bridge deck amidships. There is a

picture of this bridge deck in "The Four Masted Barque," 9s. 6d. There is also a photograph of PRIWALL which was a sister ship to PAMIR. PARMA was very similar to the ARCHIBALD RUSSELL, of which there are both drawings and photographs in the book.

Emigrant ship

I am looking for a print or engraving of the *Rockhampton*, an emigrant ship of the Black Ball Line, which sailed from Liverpool for Brisbane for the last time in 1863. A reference in a Brisbane newspaper of the time says: "the ship, *Rockhampton*, formerly called the *James Brown*," but I do not know if this was in fact the case.—Miss R.C., London, W.14.

Can any reader help with this query?

Preventer braces

The mention of preventer braces in a letter from Admiral Cumberlege in the current "Mariner's Mirror" prompts me to ask whether these were kept permanently bent.

Steel quotes preventer braces for

main and fore lower and topsail yards only and lists no blocks for them. They were, therefore, presumably single so what was their lead?

Steel also quotes additional preventer braces for "war only" for main and fore lower yards only, these braces requiring no less than four single blocks each. Were these braces only rove before going into action, and what was their lead?—C.B., Bishops Waltham, Hants.

Yacht query

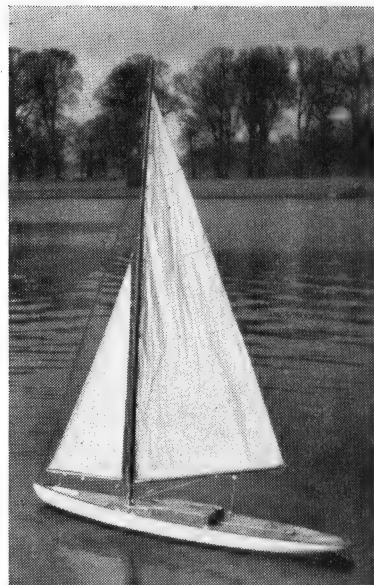
I am in search of the designer of the yachts *Carissima* and *Lone Star*. My purpose is to build a scale model in which I need detailed plans.

They were built in Kiel, Germany in 1929 by Germania Werft. Total length 184 ft. 6 in., breadth 28 ft. Due to liquidation, Germania Werft was only able to supply me with a faint copy of the plan view. I need the stern profile the most.

Last known by me the *Virginia* (ex *Carissima*), was old to a party in England in late 1938. It may still be in your country or at the bottom of the sea.—E.L.P., Bakersfield, California.

Marbleheads and radio control

W. S. WARNE dilates on some of his experiences with the radio-control gear installed in his yacht and how he overcame some of the problems



FOR SEVERAL YEARS a friend and I devoted most of our spare time to model car racing. Then we switched to radio-controlled power boats and finally to radio-controlled yachts.

The A class and ten-rater were ruled out by difficulties of transport and we finally came to the Marblehead class, which I can transport fully rigged if necessary. We both decided to acquire one and fit them up to run together, which would more than double the interest. Jack, my friend, bought *Antoinette* and I *Ballerina*. We use four-reed receivers, one fitted with low frequency reeds and one with high frequency.

Ballerina's sail mechanism is built up from a disposal set of gears modified and driven by a Taplin motor and while it is slower working than *Antoinette's*, it is more powerful and has less overall movement. This has been overcome by the use of three pulleys to multiply the available amount of travel.

The steering is effected with an Ever Ready motored G.H.R. unit, giving progressive control of the rudder, the area of which was enlarged by about one third. Both motors are wired to run from one 4½ volt battery. The equipment, which is fitted in a plywood box, weighs just over 3 lb.

The yacht was sailed at first without any compensation for the extra load, but it was soon decided that it would be necessary to adjust this. The lead keel was removed, weighed, and a 3 lb. strip removed from the top of the lead. This strip was about an inch in depth. A wood spacing block was made with a depth of 2 in. and the keel refitted, thus giving the remaining

lead a greater leverage. This has proved satisfactory—the boat now sailing on her correct waterline. The picture was taken before correction.

It is essential that the box containing the equipment is strongly made, and the sail operating gear is rigidly fixed to the box, top and bottom, as all the operating strain would rip out any flimsy attachment.

The limit switches used are somewhat different to the usual type. They consist of contacts bearing on the final drive flange with a piece of insulating material let in the periphery at one point, giving a 180 deg. movement of the crank, which operates in a slot of the projecting lever. This has the advantage that no damage results from incorrect connection of the motor battery. The batteries used consist of two B.110, in series, giving 45 volts HT. A D.18 provides the low tension, and one 4½ volts, in my case a D.886, for both sheet and steering motors.

Celluloid shield

In order to save the sheet-hauling gear from entanglement in the rudder gear, a sheet of stout celluloid is arranged to clip over the tiller arm and the pulley mounts—this can easily be removed for adjustments to the operating rod.

Another little tip to avoid fouling of lines is to limit the angle of movement of the pulleys by forcing a piece of fuel tube over the pivot, thereby stopping any chance of the pulley turning a somersault, as they are apt to do when lines are whipping about in a breeze.

The sheet haul gear on the *Antoinette* is basically similar, but an old alarm clock mechanism has been used as a

reduction gear. The bell mechanism was taken out and the clock train of gears only used. The last gear shaft before the escapement was extended and coupled to a Mighty Midget motor.

The sheet control arm was fixed to the shaft originally holding the spring and this arm and its gear wheel were soldered together to lock the ratchet mechanism. Limit switches are bolted to the frame in such a position that the sheet control arm will operate them at the required extent of travel.

A word on the arrangement of the main sheet may be of interest. Two methods are possible as shown at *a* and *b*. In both, the travel of the sheet is equal to the travel of the control arm, but as this latter must inevitably be limited to, say, 6 in. it is desirable and usual to double the sheet travel by an extra pulley gear. This would be fitted as at *c*.

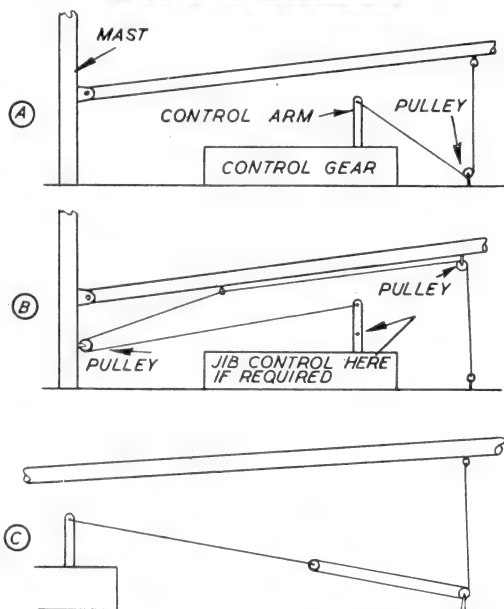
An alternative means of increasing the main spar movement is to bring the attachment point of the sheet further forward along the spar.

The jib can also be operated from the control arm but as the travel required is less, the sheet should be attached lower down the arm. The correct position is, of course, dependent on the travel required in relation to the travel required by the main sheet.

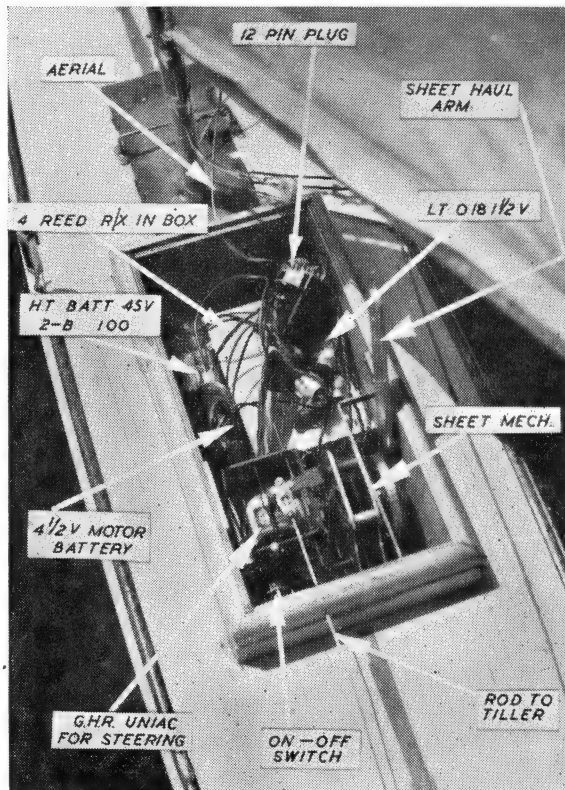
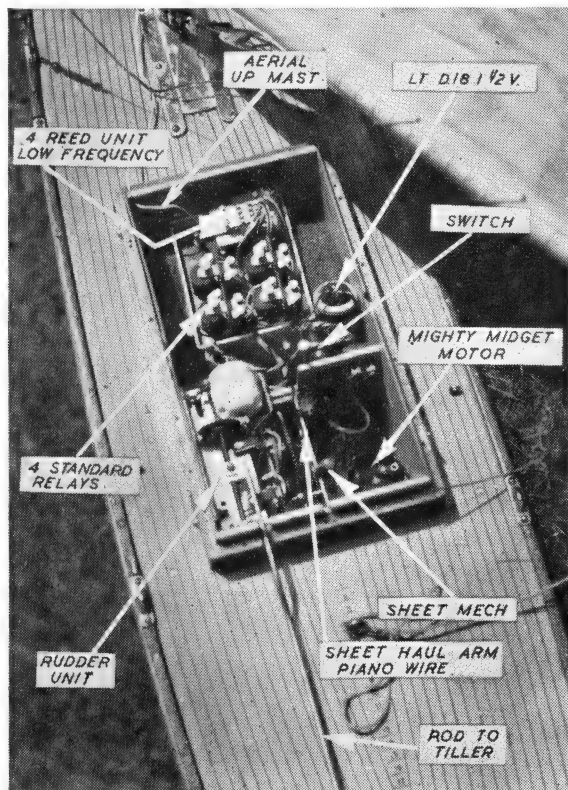
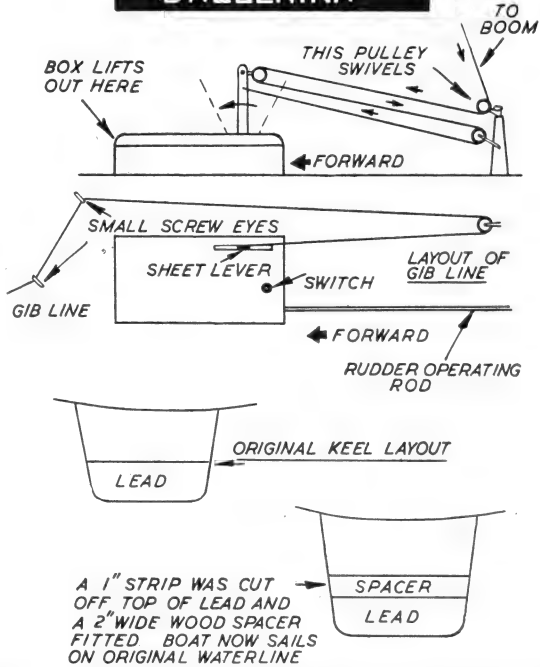
In practice, on a Marblehead, a compromise has to be reached and generally the rule should be to fit the jib sheet as low as possible on the control arm and then adjust the sheet length so that when close hauled both sails are in correct relative positions. Set this way it will be found that the jib is on the free side in all other positions.



ANTOINETTE



BALLERINA



EAST GERMAN NAVAL POWER

DESMOND WETTERN reviews
some of the warships that form
the core of the post-war fleet
of 'Iron Curtain' Germany

THE DRAWINGS ON this page are of more than passing interest since three of the ships shown are units of the East German Navy, drawings of which have not, so far as is known, been seen in this country before.

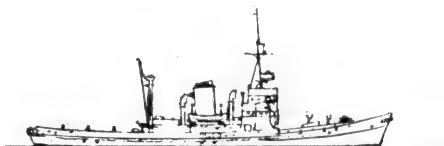
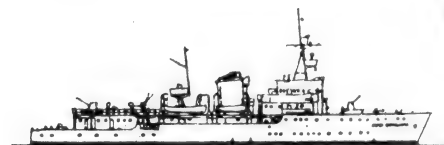
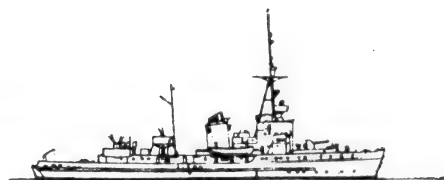
The three upper drawings, which are the main ones in question, show that since the war, naval architects in East Germany have shown little originality in design. The first of the three is of a fleet minesweeper. This vessel is almost identical to the M class craft which were built by the Germans in fairly large numbers in the middle and late 'thirties and early 'forties.

The later units of the German M class would appear to be virtually

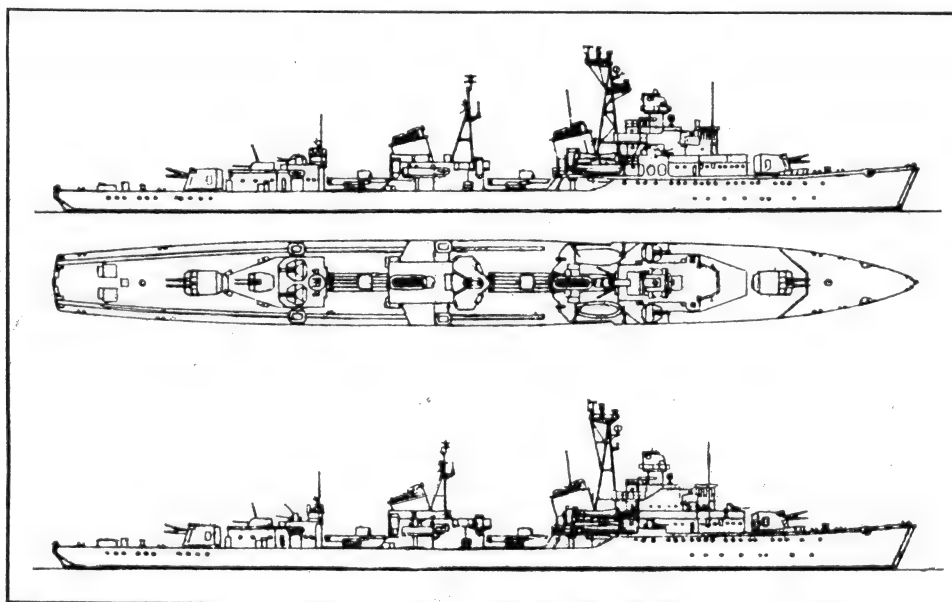
indistinguishable from the vessel shown, and it may well be that the class shown are not, in fact, new vessels. The only difference between these craft and the war built type is that they are diesel driven.

The second vessel shown, the *Ernst Thalmann*, is a comparatively old ship, being built at Copenhagen in 1928. She was formerly the Danish fishery protection vessel *Hvidbjørnen*. Her armament, while in Danish service, was two 3.5 in. guns and she had a speed of 14.5 knots. She was scuttled south of Korsør in August 1943. In 1950 she was taken in hand for a two-year refit at Stralsund.

The remaining vessel, No. 926/7 is very similar to wartime German tenders. It is a salvage tug and would appear to be unarmed.

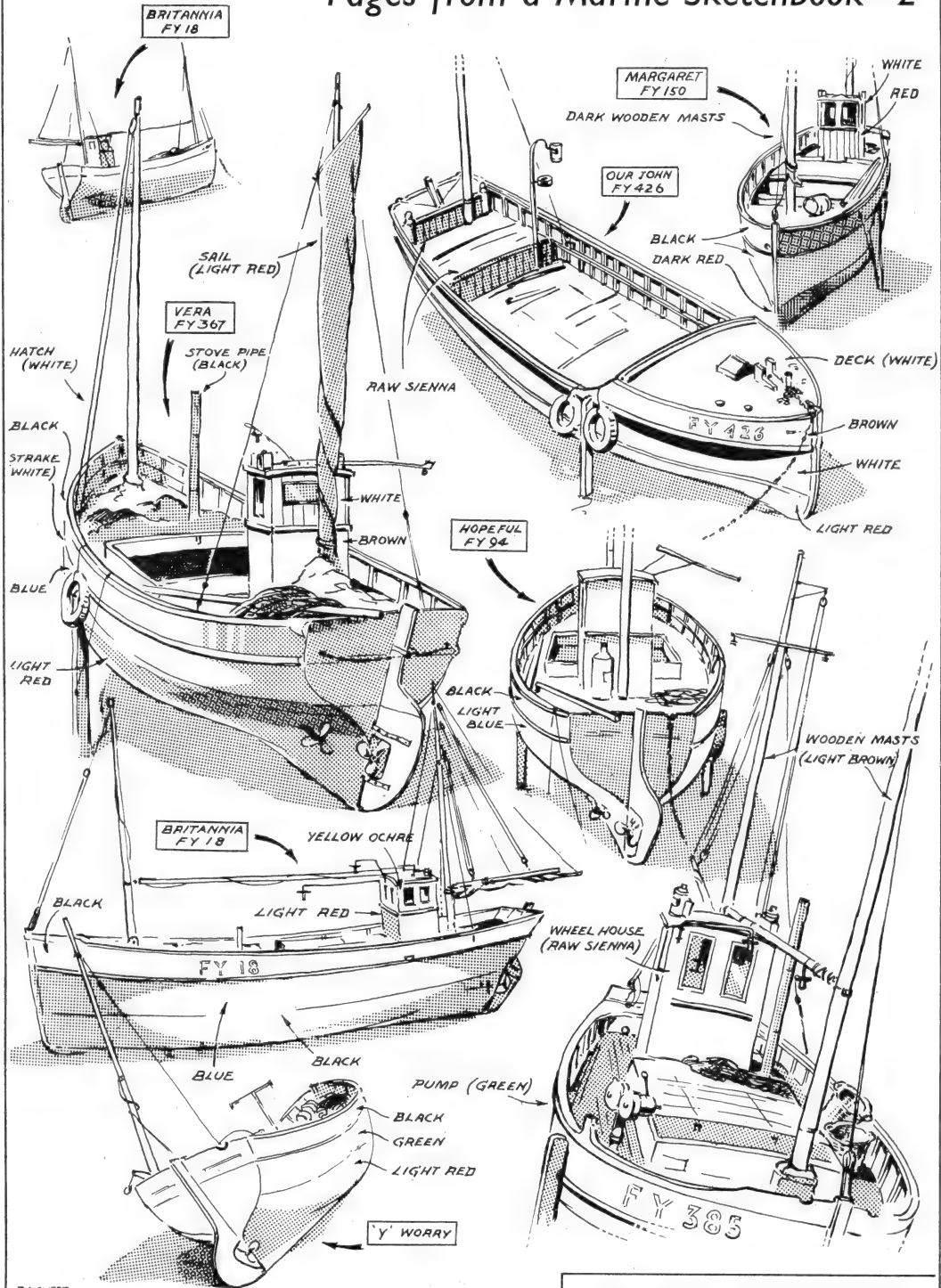


The three larger drawings show two types of the latest Russian destroyers of the *Skory* class. These vessels compare very favourably with our *Daring* class, being armed with four 5.1 in. and two 3 in. together with eight smaller guns, ten 21 in. torpedo tubes and 80 mines. They are credited with a speed of 38 knots. It is an interesting point that large numbers of Russian craft of all types, from cruisers down, are equipped for minelaying.

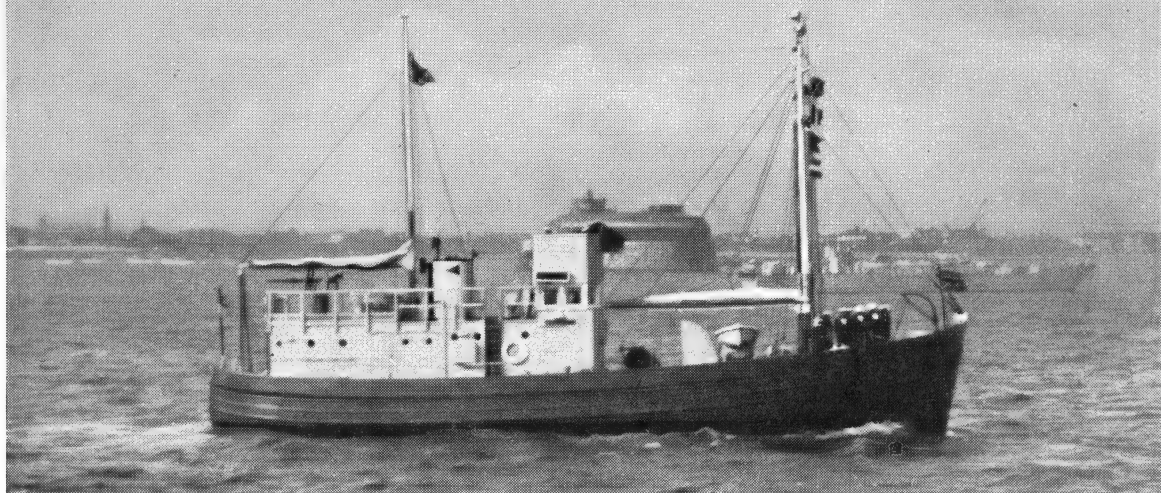


Drawings by courtesy of "Marine Rundschau"

Pages from a Marine Sketchbook—2



MEVAGISSEY FISHING BOATS



An earlier SQUIRREL—also a Fishery Protection vessel

THE British Naval Fishery Protection Service suffered an unpleasant rebuff when H.M.S. *Squirrel* arrested the Belgian trawler *Wilhelmena* in Rye Bay.

After putting a rating aboard *Wilhelmena* and ordering the skipper to head for Newhaven, the Belgian increased speed, put out his lights and lost *Squirrel* in the darkness!

The *Squirrel*, a small motor fishing vessel, did not have the speed to keep up with the fast motor trawler and was powerless to catch her. The rating was put aboard the Verne Lightship from *Wilhelmena* and was later picked up by *Squirrel*. This is believed to be the first time that a poacher, having been arrested fishing inside the three-mile limit, has eluded her escort.

It may be economical policy on the part of the Admiralty to employ the two M.F.V.s *Squirrel* and *Watchful* on fishery protection duties, but surely it would be very much better to use faster vessels such as M.L.s or seaward defence boats for these duties instead of laying them up in creeks around our coasts? The North Sea fishery protection Service which extends to Icelandic waters has a number of Algerine Ocean Minesweepers employed, which are admirably suited for the job.

Before the 1914-18 war, the old Torpedo Gunboats were employed on fishery protection duties, and I can recall, when watching shipping in the North Sea, that one of these T.G.B.s was nearly always to be seen on patrol. There were *Halcyon*, *Leda*, *Spanker*, and *Jason* to name a few, as well as an earlier *Squirrel*—a gunboat of 130 tons built in 1905 which worked out of Lowestoft.

* * *

During the debate on the Navy Estimates, it was stated that the Royal Navy, in the event of war, would become a part of the combined N.A.T.O.

Fleet. This sounds fine in theory, but remember that a battle group comprises aircraft carriers escorted by anti-submarine and anti-aircraft frigates and guided missile vessels.

Now, bear in mind also that there are often conditions at sea when it is impossible to fly off aircraft from a carrier, and it may well be that, during such a period, a battle group could be attacked by a powerful squadron of Sverdlov-type cruisers and be overwhelmed. This was the case with *Glorious* in the last war, if my memory serves me right.

Surely it is time to start building the answer to the Sverdlov raider type cruisers to protect our convoys and our future battle groups.

* * *

The trophies presented to H.M.S. *Ashanti* in 1939 by the chiefs and people of Ashanti are to be returned to the Gold Coast. The Admiralty has agreed to loan to the Gold Coast Regiment the heavy gold shield and embossed silver bell, which were presented to the ship by the Asantehene chiefs, until they are needed for a new H.M.S. *Ashanti*. The former ship was broken up in 1949.

* * *

Agreement has been reached between the Admiralty and Pakistan Naval Headquarters for the sale to Pakistan of two Battle class destroyers *Gabbard* and *Cadiz*, and two CR class destroyers *Crispin* and *Creole*. Also Pakistan is to have the cruiser *Diadem*.

* * *

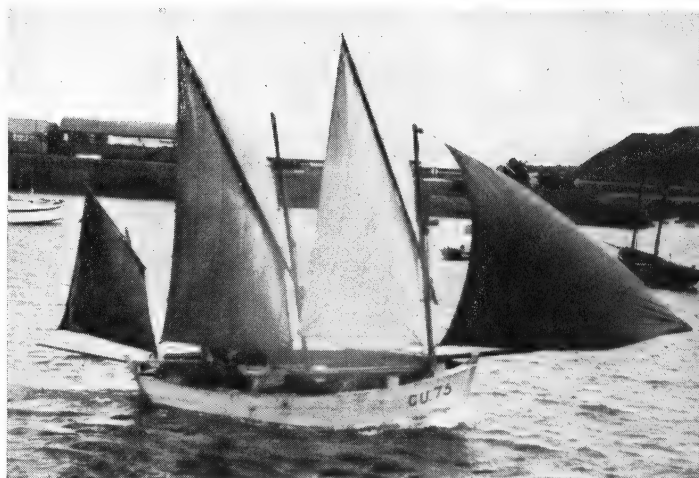
H.M.S. *Flint Castle*, after nearly 13 years' continuous service since first being commissioned at Leith in 1943, has gone into reserve at Devonport. She has been serving in the Second Training Squadron at Portland, and came into Plymouth flying a 320 ft. long Paying Off pennant.



The Guernsey and Sark fleet

ARTHUR BRADBURY recalls
memories evoked by the fishing
boats of the Channel Islands

*One of the boats of Guernsey's ancient
fishing fleet under a full head of sail*



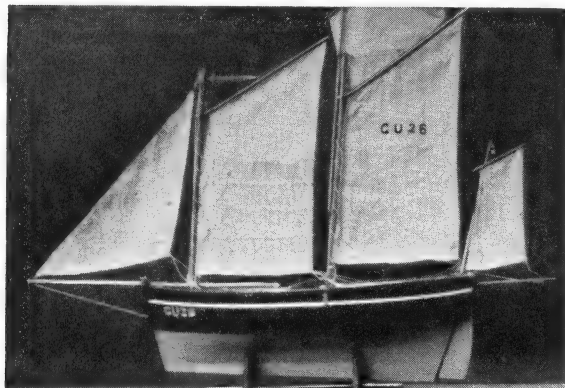
THE OLD TYPE of Guernsey and Sark fishing boat is dying out. There are a few of the smaller class left, but even these are 70 to 80 years old, and when they become too old, or are lost, they are not replaced.

The old boats were built to sail and very fine in design they were. They had a strong Breton influence in their design and rig, even to the primitive wooden pump, encased in a box aft of the main thwart, through which the water was conducted.

All the old boats were built on the islands—the Bakers of Sark have been building boats for well over 160 years, the craft being handed down from father to son. The smaller boats cost as little as £1 per ft. 60 years ago.

The Guernsey and Sark boats were built from half models, carved from a solid block of wood, to the scale of 1 in. to 1 ft. The model was then cut in cross-sections at every inch, and from these sections the moulds were made for the boat's construction. Nearly all these boats were carvel built or grown frames of oak, but sometimes in Sark, local elm was used.

A model of a Guernsey fishing boat built by the author



The planking was made of imported pine and because they were very heavily built, it is a wonder how they managed to persuade the planks round. Usually they were steamed and sometimes they were soaked for a few days and then placed in a hot brick built baking oven.

Heavy carving job

I have seen a 12 ft. boat, with only seven planks a side, and these boats had a tremendous beam. An 18 ft. boat would have as few as 12 planks a side at the turn of the bilge. The planking was very thick and would literally be carved hollow on the inside of the boat.

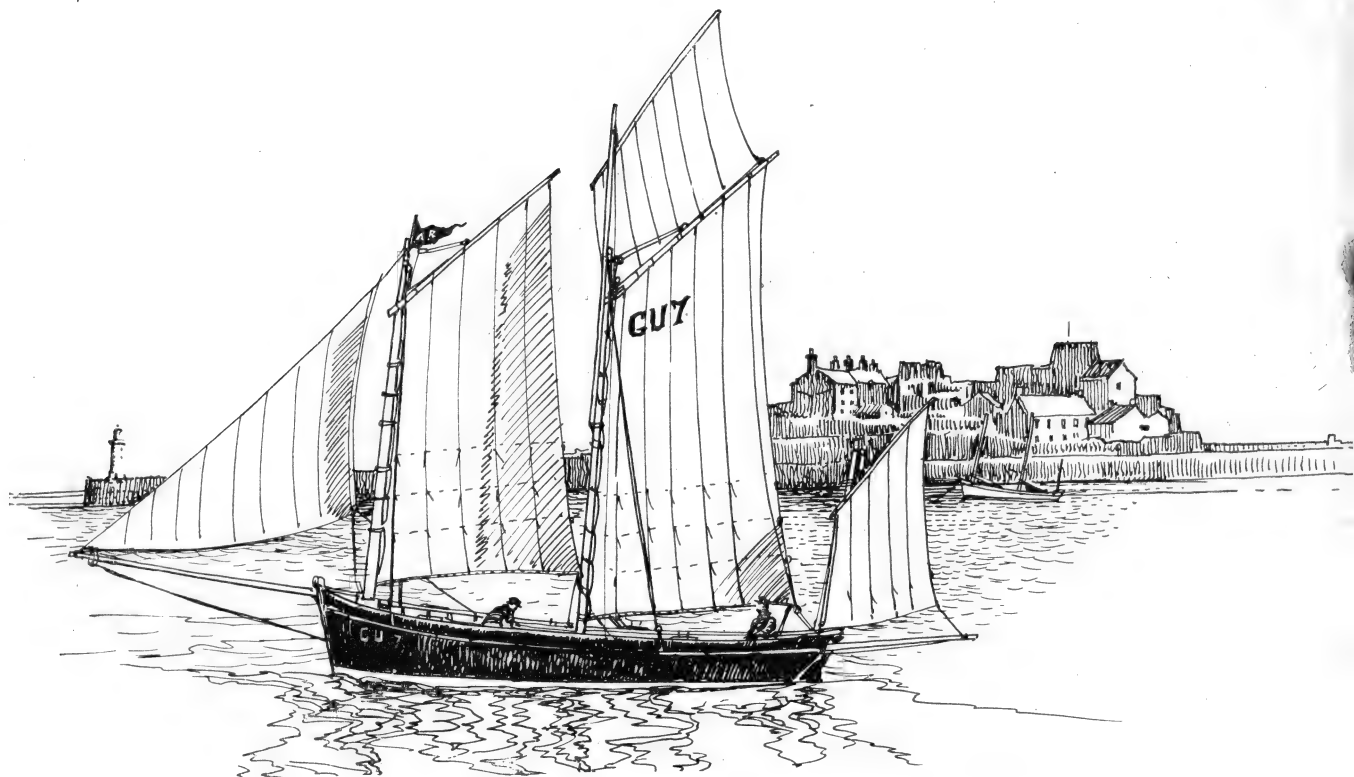
Like his French cousin, the Channel Islander has an eye for colour where his boat is concerned. She would be painted either white or black and sometimes a pale blue; the white boats were painted a bright emerald green below the water line, and pale blue inside with red oxide below the floor boards.

The black boats would be green below the water line and pale green inside with a white line below the gunwale.

In the old days, the Guernsey and Sark boats were of two distinct types—the large mackerel boat and the smaller crab boat. There are very few of the former type left and one of the last of the larger type was the *Lilian* owned by J. Corbett. She was used for pilot work, fishing for conger and mackerel.

Size of the craft

The larger boats were from 30 to 36 ft. in length, had a beam of 12 ft. with an 8 ft. draught aft, and weighed about 12 tons. They carried three masts, and spread an enormous sail area. Some were completely decked in and some had only a small fore deck. The earlier boats of 150 years ago were rigged with lug sails—without doubt they have developed from the French "Chasse-Marées," not only in rig, but in hull form and construction.



Arthur Bradbury's impression of a mackerel drifter leaving Guernsey Harbour

The boats were latterly gaff rigged. They had a fore sail mainsail, a standing lugsail for the mizen and a very large jib. These sails were loose footers and a top sail was carried over the mainsail. The jib was set on an outhaul, which led to a sheave on the stem just above the water line.

These details are shown in the two models made for the Guernsey States, and are in the Town Museum at St. Peter Port, Guernsey.

Sark fishermen in the days of sail frequently dyed their jibs or mainsail a bright red, so that their wives could distinguish them from afar. The smaller type of crab boat, from 12 to 20 ft. in length, were rigged with three masts (the very smallest had no mizen) and these picturesque schooner-rigged boats were probably the smallest schooners around the British Isles. Rigged with a sprit sail on the fore and main—loose footed with a standing lug for mizen—I have seen some with a gaff-rigged foresail and sprit'sl mainsail. When it came on to blow, they would take in the foresail. When pulling in the crab pots they would work under the foresail jib and mizen.

The names of these craft preserve the dignity of the old school of christening, with such names as *Admiral*, *Nelson*, *Vigilant*, *North Star*, *Vigilo*, *Christable* for Sark boats and *Grace Darling*, *Wanderer*, *Spirit of the Deep*, *Hope*, *Bessie*, *Hirondelle*, *Joli*,

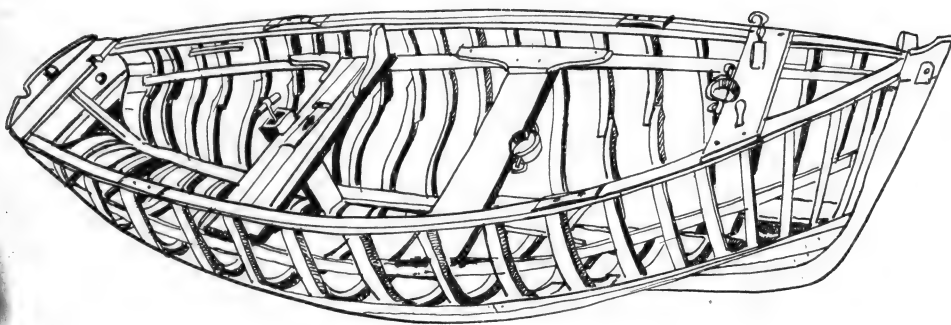
Esperance, *Morning Glory* and *Gabrielle* for Guernsey boats.

A common feature of the Guernsey boats was the legs, one on each side, which enabled the boats to stand upright when the harbour dries out at low water. The legs were stowed aboard when the boat was under way.

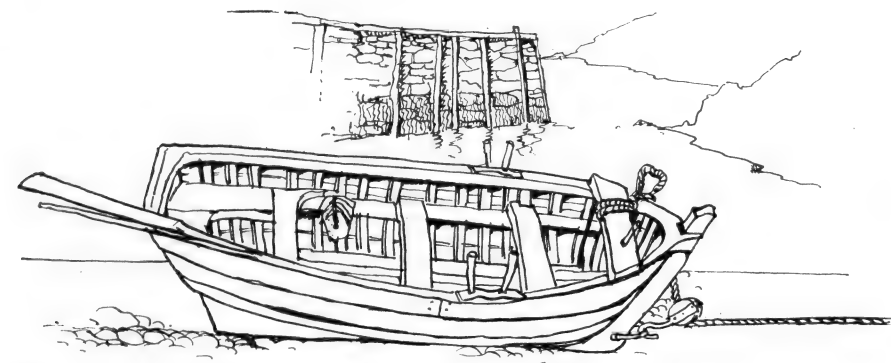
Anyone who examines these beautiful little boats will notice the fishing gear, which adds to their romance and picturesqueness. I refer to the *panier a cou* (a basket for the neck), not unlike the Scottish creel, made by the fishermen of withy or willow. The crab pot is of the usual round pattern, but larger than those used on the south coast of England. Lastly, the couge or eel basket. It is pointed at each end with a small square opening at the top and carries sufficient live eels as bait for a day's fishing for pollock.

Before and during the closing years of the last century, the larger drifters would fish in Plymouth and Devon waters in the springtime, returning to the islands in early summer. In the autumn the fleet would sail for Ramsgate and fish in those waters until the winter.

The Channel Islander—like most islanders—is an all-round man, and in the old days he turned farmer in the winter months. Mention should be made of the vraicking expeditions made in these boats for



Skeleton of a fishing and pilot boat



The author's sketch of an old Sark boat circa 1860

seaweed or vrac to be used for fertilising the land. The weed would be stacked near the farms on these expeditions—when there is a special time and season for cutting it.

Cast away on Humps


They would use the large boats to sail to the scene of operations, and the smaller ones for cutting the weed, using a small bill hook for the purpose. On one occasion when four Sark fishermen were collecting the vrac off the coast of Herm, their large boat was holed by a rock. They took to the small boat and landed on one of the Humps, a group of small islets and spent the night under their upturned boat.

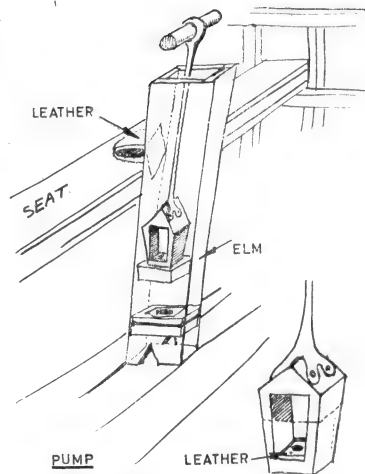
THAMES BARGES are the last survivors of British mercantile sail. They are remarkable craft that can carry up to 200 tons of cargo with a crew of only two. At the outbreak of World War II there were still many hundreds in use, but today, only a handful remain trading under sail alone.

All who know the graceful picture they make and the splendid tradition they represent will realise what a tragedy it would be if they vanished entirely. The Sailing Barge Preservation Society has been

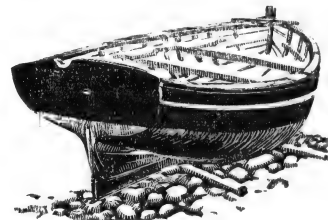
One of these men still survives on the Isle of Sark, well and hearty at the age of 93.

Fishermen have always been superstitious and the Channel Islander is no exception. Some of the rocks off Guernsey were held in awe by the fisherman and, when passing, he would either raise his cap or lower his topsail, and no sensible Guernsey man would count his catch until the end of the fishing trip.

The "Guernsey" or "corset d'oeuvre", the distinctive dress of the Channel Island fisherman, is a hand-knitted garment made locally and is very different from the machine-made article. Hundreds of these Guernsey "frocks" were made for the Royal and Merchant navies in the early days of 1940. 



An old wooden pump with (inset) details of the plunger



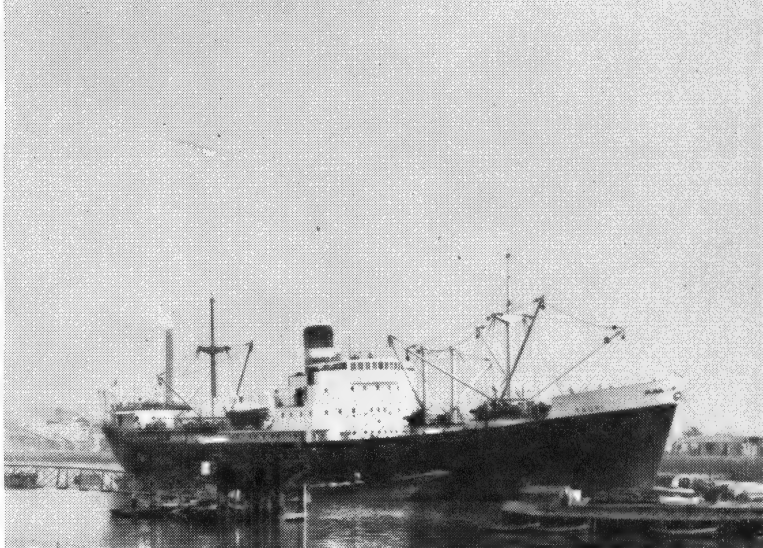
CHRISTABEL of Sark—a 14 ft. craft built by de Paris of Guernsey

Preserving a spritsail barge

formed to acquire sailing barges and to keep them working under sail alone for as long as possible.

The society was first formed under the name "Thames Sailing Barge Trust" and some donations have already been received. An initial payment has been made towards the purchase of the *S/B Memory*, £10,000 is needed to complete the purchase, to repair and refit her, to provide running capital and to cover the purchase of a second barge. Contributions should be forwarded to the society, 158, City Road, London, E.C.1.

ALFRED E. WEIGHTMAN
describes the constantly
changing scene on the
Medway where the variety
of shipping is never-ending
and offers something of
interest to every enthusiast



MEDWAY

THE RIVER MEDWAY, flowing as it does into the broad estuary of the Thames, with its infinite variety of craft and scenes, forms a never-ending source of enjoyment for all who love ships, the sea and rivers.

Many of the barges seen these days have been turned into houseboats and the owners still contrive to make them as colourful and picturesque as they once were. Up beyond Rochester Bridge lies one of these barge-yachts called the *Pride of Sheppey*, which I remember being asked to navigate to Durban, South Africa, at the end of

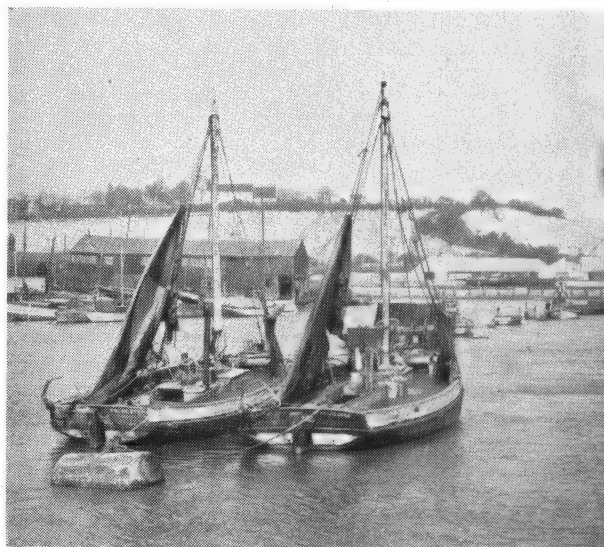
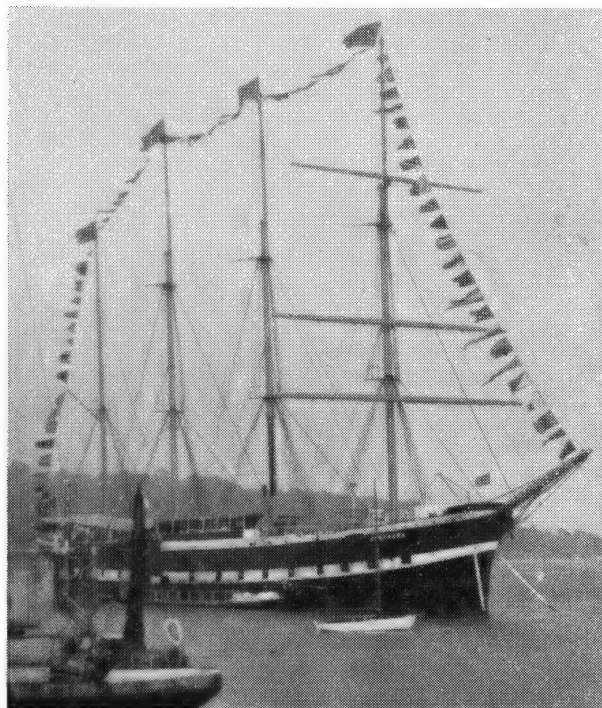
World War II by an enthusiastic band of emigrants.

The "iron-pot" *Adriatic* was a regular visitor to the sand wharf at Lower Upnor, first as a sailing-barge and then when freights had to be speeded up, it was turned into a motor-barge, finally being holed off Queenborough.

Near Upnor Castle, which dates from the time of Elizabeth I, many ammunition barges and supply vessels lie at their moorings in the river until their turn comes at the R.N.A.D. wharf. The trim vessels which are on harbour and coastal service for the Admiralty are part of the river scene,

such vessels as the *Obus*, *Ballista*, *Spaburn*, the T.I.D. tugs and others being frequent visitors. On the opposite side of the river where the dockyard lies, many craft are constantly going into the wharf—the *Bacchus*, a store-carrying and distillery vessel, is often seen.

The training ship *Arethusa* lends an air of distinction to the scene at the bend of the river at Lower Upnor, and she must bring back many memories to the old sailor who sees her tall masts and spars and perhaps some nimble boys climbing up the rigging and going out on to the yards. Once upon a time she sailed round the





Left: A Dutch coaster in Strood Docks

Below: The 70 year old MELISANDE seen at Strood in 1954

.....
Opposite page

Top: TAURI, a timber trader of the Medway

Bottom left: All dressed up for a special occasion—the famous ARETHUSA

Bottom of page: Two functional shrimp boats from Rochester at Strood pier

Extreme left: The imperious figurehead of H.M.S. WELLESLEY at Chatham Dockyard

MISCELLANY

Horn as the *Peking* in the West Coast nitrate trade. Now she is the cradle for those setting out on a sea career in the Royal or Merchant Navies.

The New Medway Steam Packet Company's vessels are part of the river, one might say, for they have plied their passenger trade on it for many years. The *Medway Queen* still takes her trippers across to Southend and in the winter months one can see the *Queen of the Channel* of the G.S.N.C. laying up at her mud berth until the new tripper season starts again. A steady stream of well-known foreign vessels visits the port—Danes, Norwegians, Finns and trim Dutch coasters flit in and out, and can often be seen in Strood Docks.

Among the coasters are the smart little Bradley vessels, the *Lady Sheila*, *Lady Sophia* and *Lady Sylvia*. The London and Rochester Trading Co. Ltd. is the most important of the companies owning river craft, and the fleet comprises over 150 vessels, from tugs and motor barges to smart motor coasters.

Sometimes a steam yacht like the *Melisande* finds her way into the port of Rochester. She is a smart looking craft and was painted in the conventional white of a yacht and with a buff funnel. This vessel was in Strood Docks for quite a long time and many passers-by admired her lovely lines.

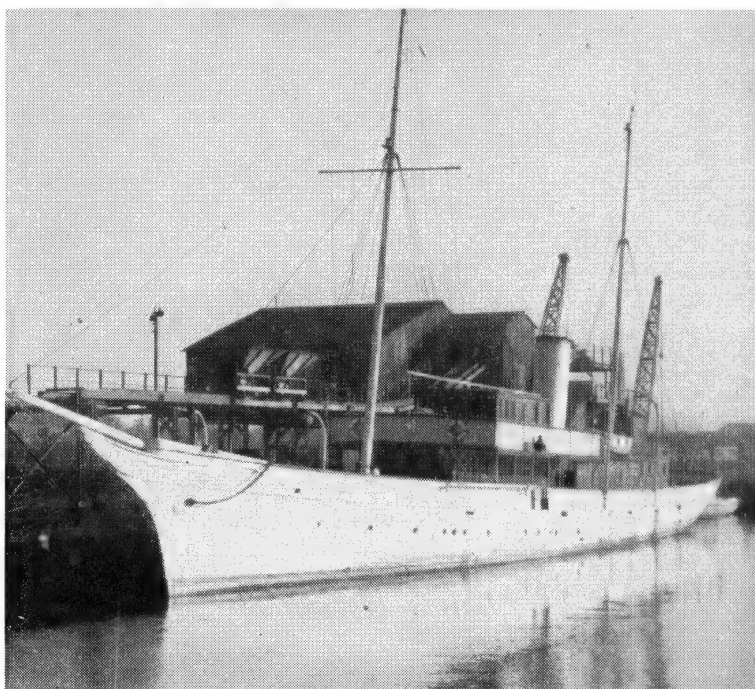
Shrimp boats make their daily trips in and out of the river carrying their succulent cargo to shops in the Medway towns, and as they go up the river their little boilers seem to be bubbling over with joy as they prepare the

shrimps for the market. They moor up at Strood and Chatham and can easily be distinguished by the nets hauled up into the rigging for drying.

Ship modellers may be interested to know that there are quite a number of ship models to be seen in the area. In the window of the New Medway Steam Packet Company are two models, one of the smart little *Rochester Queen*, and the other of the *Queen of the Channel*. The London and Rochester Trading Co. have models of their fine little coasters and Knight's have models of their tugs. In the Rochester Museum, at Eastgate House, there are a number of nautical

models which include barges, and also a good model of the *Cutty Sark* made by a modeller of Strood. Peter Whitehead has a collection of very fine models, made from cardboard, of various passenger vessels.

Over on the dockyard side the sunlight may catch the bright paint of a figurehead (there are a lot of these in and around the Chatham Dockyard) and the pigeons flutter and coo round the under supports of the Sun Pier. Such is the everyday Medway scene, the tide rises and falls, vessels and boats come and go, giving an ever-changing picture which is there for all to see and to enjoy. ⚓



SHIPS

IN THE NEWS

By LAURENCE DUNN

ON APRIL 20 the 26,000 ton *Empress of Britain* left Liverpool on her maiden voyage to Quebec and Montreal. The first transatlantic passenger ship to be built for the Canadian Pacific service since the war, she will be joined next year by a sister, the *Empress of England*.

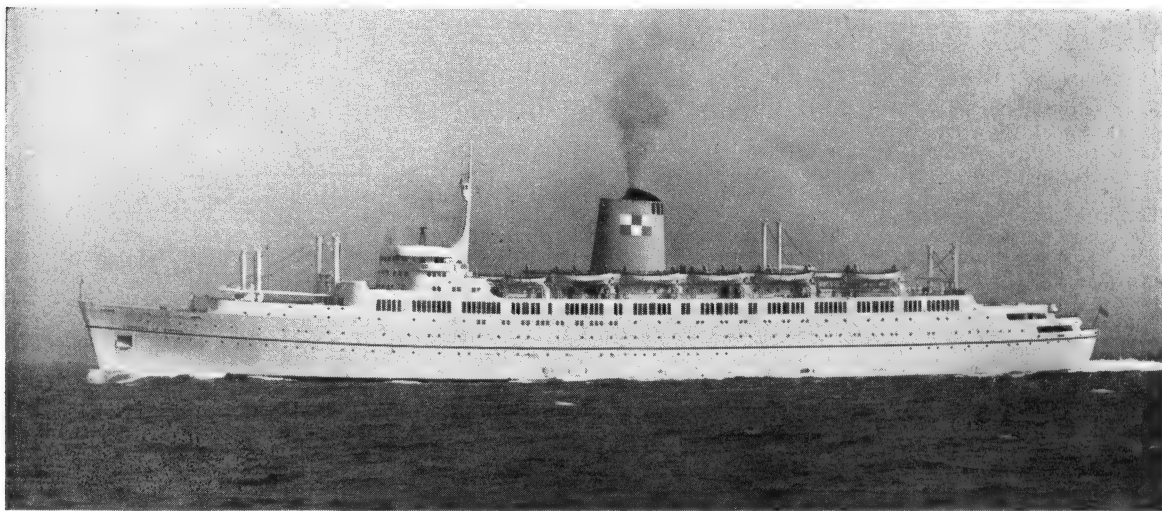
Following the modern trend in transatlantic travel, she caters primarily for tourist class passengers, these numbering 900, those in the first class

Designed to meet the severe conditions often found on the N. Atlantic, the *Empress of Britain* is fitted with Denny-Brown stabilisers and is strengthened for navigation in ice. To ensure good manoeuvrability at slow speeds—often necessary in the St. Lawrence—special attention has been given to her rudder design.

Her silhouette is unusually low for a ship of her size, yet she has seven decks—these being the boat, promenade and others named A to E. There are six holds, three forward and three

communication with the bridge. Its base has been broadened to house the machinery for the first class elevator.

Besides the normal bow anchor there is a recess for a third one in the stern. Davits of Welin McLachlan type handle the lifeboats, 12 in number. All are of Birmabright alloy and, apart from two motor lifeboats, all are fitted with Fleming hand-propelling gear. Excepting only the two 26 ft. emergency boats, all are 36 ft. long and have a capacity of 132/146 people.



The C.P.R. liner, *EMPERESS OF BRITAIN*, which was launched by the Queen last year

being limited to 150. A notable feature of her design is the air conditioning.

The overall length is 640 ft., breadth mld. 85 ft., depth mld. 48 ft. and load draught 29 ft. A twin-screw ship, she is fitted with two sets of Fairfield-Pametrad D.R. geared turbines designed for a maximum output of 300,000 s.h.p. At their service output of 26,000 s.h.p., they will give an average speed of 20 knots.

The main boilers comprise three by Foster Wheeler, two of controlled superheat type and the third a reheat one, which in addition to its normal evaporation is designed to reheat the exhaust steam from the h.p. turbines as mentioned. There is also an auxiliary boiler for use in port.

aft—and these have a total capacity of 380,650 cu. ft. of which nearly one fifth is insulated.

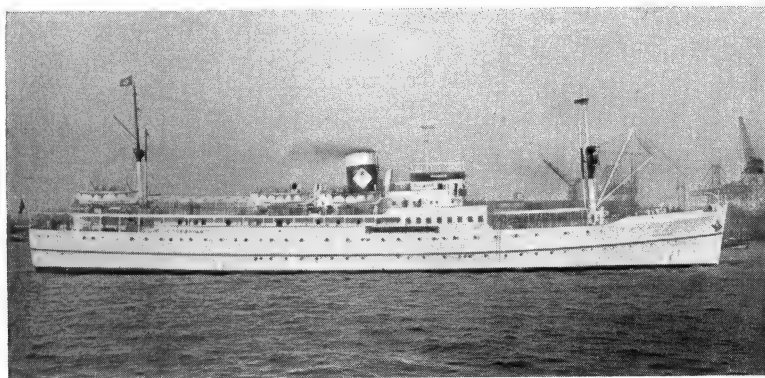
As regards the look of the ship, the most noticeable feature is the large stayless aluminium funnel which is of true streamlined form—the result of a long series of wind tunnel tests. The Coxcomb centre ridge (irreverently referred to as the “firemen’s helmet”) serves to keep all smoke from the deck regardless of the force and direction of the wind. Thanks to the provision of air-conditioning the need for projecting ventilators has been eliminated.

The single mast—also unstayed—is an integral part of the bridge and carries a heated and glazed crow’s nest; this being in direct telephone

As befits the Northern route, the long promenade deck is glazed, very tall three-panelled windows being fitted to give the maximum visibility. Above, the sun deck, although open to the sky, is glass-enclosed on either side. The first class staterooms and suites are arranged amidships in A deck, while those of the tourist class are spread over A, B and C decks. They are either two or four berth; if the latter, the upper berths are of a folding Pullman type which hinge and stow against the bulkhead.

CONVERTED TO ROYAL YACHT

ROYAL YACHTS have lately featured prominently in the news. One of the most recent additions to their august ranks is the *Mansour*, 3,740



The steam-driven Royal Yacht MANSOUR

tons gross, which has been converted for the use of King Saud of Saudi Arabia by the Howaldtswerke yard at Hamburg.

Built by Blythwood in 1936 for the Furness Group as the *Fort Townshend*, she was one of a pair of 13½ knot steamers designed for the Furness Red Cross Line's service between New York, Halifax and St. John's, Newfoundland. Both she and her sister *Fort Amherst* have accommodation for over 100 passengers and a cargo capacity of 2,000 tons. After wartime duty as a transport, she returned to her original run and for a while also covered that between New York and Bermuda, while larger tonnage was still under requisition.

In 1952 both ships were sold, her sister to the Admiralty and the *Fort Townshend* for service under the Arabian flag. Renamed *Al Amir Saud* by her new owners, Mohamed Abdullah Alireza, Jeddah (Haji Abdullah Alireza and Co., managers), she operated as such till last year when she was bought by King Saud and sent to Germany. There reconstruction work cost £250,000 and lasted six months, the vessel finally leaving Hamburg for her home port, Jeddah, early in April.

As a Royal yacht, she now has up-to-date air conditioning and besides the royal suite has quarters for a number of attendants. Officered by Germans, she has an Arabian crew. The Royal suite and large dining room are situated on A deck, between the base of the mainmast and the second lifeboat, while at the fore end of the superstructure is the spacious first class hall—recently enlarged—with its prominent throne.

Externally the most notable changes lie in the joining of the midship and after deckhouses, and the filling in of the well deck, which formerly extended from the foremast to the bridge. Here, beneath sliding hatch covers, there is now a swimming pool, while the 'tween

deck space either side provides accommodation for soldiers. Below, the space which was formerly No. 2 hold has been made into a number of two-berth cabins.

A REMARKABLE FRENCH DESIGN

VIEWED EITHER from the aspect of interior design or external shape the motor vessels *Boree* and *Hebe* are among the most remarkable units of the French mercantile marine. Relatively small, they measure approximately 2,100 tons gross and have a maximum deadweight capacity of 2,350 tons. Both were built last year by the Ateliers et Chantiers de Bretagne, Nantes, for the Societe Navale Caennaise (G. Lamy et Cie), Paris.

In contrast to the many colliers in this fleet they are designed to operate on a new fast service between north French ports and North Africa. They are so designed that for the south-bound trip, when heavy bulk cargoes are the rule, they are single deckers. Homewards they virtually become shelter deckers, well suited for the carriage of fruit, vegetables, etc.

One's first surprise at seeing the *Boree* is at the extremely wide hump-backed funnel, which is so large that in it is placed the engine room skylight. Glancing forward past the lofty kingposts and Hallen type bipod masts, the stem provides another novelty, especially when the ship is in light condition.

Above the waterline the bow has a sharp forward rake, but the lower part of the stem slopes in the opposite direction and finishes in a pronounced bulbous form.

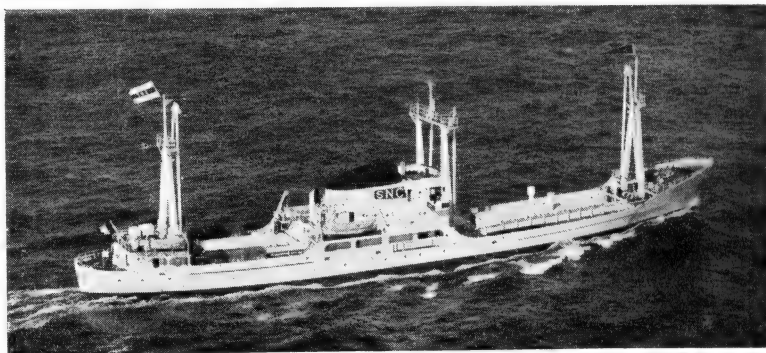
Overall, the *Boree* measures an inch short of 297 ft., the moulded breadth being 43 ft. 8 in. She is the first merchant vessel to be fitted with S.E.M.T.-Pielstick diesel engines and two of these, both turbocharged and geared to a single shaft, develop a total of 3,000 b.h.p. On northbound voyages, carrying vegetables, etc., she has achieved speeds of up to 18 knots.

There are two holds, of which the larger forward one may be divided into two when required, this by means of a portable transverse bulkhead. Another interesting feature is installation of hinged 'tween decks. These, known as MacGregor Comerain Extra-decks, lift upwards and rest against the hull sides when not in use.

DECK CRANES WILL REPLACE DERRICKS

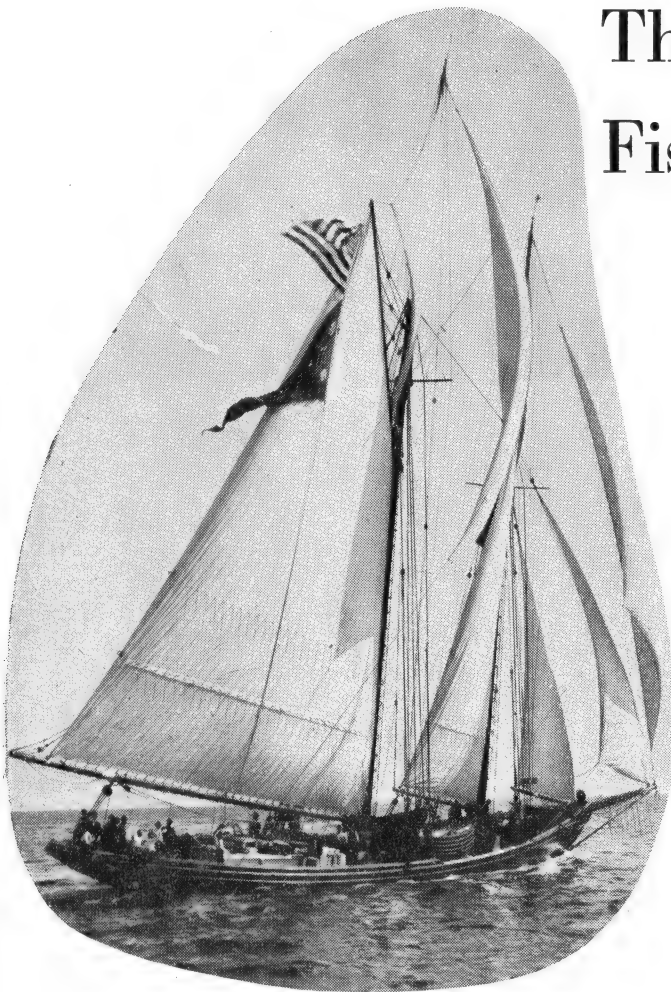
THE TRANSATLANTIC S.S. CO. LTD. of Gothenburg is one of Sweden's largest shipping firms and has long been noted for the advanced design of its vessels which maintain many world-wide services. Recently this firm ordered two cargo carriers from Gotaverken which will incorporate several unusual features. The usual derricks will be largely eliminated, their place being taken by 10 deck cranes; four will be electrically operated, the others hydraulically. Derricks will be limited to three, one on the foremast, and two aft to serve a strong room. ⚓

The cargo boat, BOREE



The Gloucester Fishing Schooners—1

E. J. MARCH reviews the craft that over the years have formed the back-bone of the Grand Banks fishing fleet



A Boston schooner (non-auxiliary) of the 1920-30 period

IT WOULD BE DIFFICULT to find a greater contrast than that afforded by the types of vessel favoured by fishermen on either side of the Atlantic. In this country the cutter and the ketch were pre-eminent, while the schooner was the choice of American and Canadian fishermen. This rig developed to perfection on the Grand Banks, where the most prolific cod fishing grounds in the world are to be found.

Extending for about 300 miles from the coast of Newfoundland in a south-easterly direction out into the Atlantic is a vast submarine plateau with comparatively shoal water, in some places only 10 to 20 fathoms deep, before the submerged cliffs slide down into the five mile abyss of the ocean deeps. The water is abnormally cold and large icebergs, brought down by the currents from the Polar regions, ground in the warmer months of summer.

In these stormy, often fog-bound, waters were to be found thousands of sailing vessels of every rig and all nationalities reaping the harvest of the sea; especially between April and October, when the waters teemed with cod, mackerel, halibut and haddock in vast shoals. Queens among them all were the incomparable "Gloucestermen," with their graceful, yachtlike hulls and lofty rig—capable of riding out the roughest seas, and carrying sail in heavy weather, although a design which, at first glance, looked more suitable for the sparkling, sunlit waters of the Solent in Cowes Week than the dark, tumultuous wastes of the North Atlantic in winter.

These wild, angry shoal waters demanded the finest seamanship and bred a magnificent, hardy race of seamen—sail carriers who scorned to heave-to, no matter what the weather, once they hoisted their big mainsails and swung west in the race home to market. The need for able, weatherly schooners brought into being as fine a fishing fleet as any the world could show, which reached its zenith just when power came in to sweep these beautiful vessels off the seas, although they survived about 30 years longer than our own trawler fleets, which so rapidly diminished after the palmy days of the 1880s.

The world will not see their like again, or those fearless skippers who knew the ocean depths like the back of their hands, finding their way in the thickest weather with uncanny precision, although in many cases they were unable to read or write.

Popularity of the pinkie

The fisheries began to develop after the conclusion of the 1812 war, and up to the middle of the century the two-masted "pinkie" was the most popular type. Notwithstanding their small size—only about 50 ft. in length—they were fine, seaworthy craft, riding the winter seas like a gull. At first, they had a simple sail plan of jib, foresail and mainsail—later a main topmast was added and staysail, flying jib and gaff topsail set. Sharp-sterned, the bulwarks were carried well abaft the sternpost to a narrow,

raking transom, similar to the old-fashioned "pink," and the underside was usually left open so as not to hold a sea.

In the 1840s, fishing from dories was introduced and the demand rose for larger hulls capable of carrying several of these boats on deck. Towards the end of the decade, Andrew Story, a well-known builder at Essex, Mass., designed and built a new model, based on the famous Baltimore Clipper, with low freeboard, deep drag to keel, raking stem and stern, and sharp deadrise.

Although the bows were round and full on deck, the great flare permitted sharp waterlines and this type of bow became known as a "cartwheel" bow. As is generally the case with a revolutionary design, it was a long time before the conservative fishermen could be induced to try the vessel, much less buy it, as they considered her to be too sharp for work in heavy seas, prophesying she would dive under the first big one and never come up again.

First of the many

Eventually she was sold and a crew obtained—her maiden trip out to the Banks made her reputation as she lived up to her name *Romp*, leaving the rest of the fleet hull down. Many similar vessels were built and because of their fine lines were nicknamed "filebottoms" or "sharpshooters."

Length overall varied between 60 and 70 ft., with a beam of 18 ft. and a depth of hold 5 ft. 3 in. to 6 ft. Keels were long with a slightly rounded forefoot, and a square stern was just abaft the sternpost. Masts often raked aft and main booms extended well beyond the taffrail, as much as 15 ft. in some schooners.

Two distinct classes now developed. One was the "Bankers" which stayed in one area until the fishing was exhausted and then moved on until a full cargo, or "fare," was salted down. They remained out for many weeks at a time and, as the price of salt fish varied little, high speed was not so essential as good cargo capacity. On the other hand the "market" boats relied on their speed to bring their catch of fresh fish into Boston or Gloucester. As prices of fresh fish fluctuated violently from day to day, according to supply and demand, a fast schooner would often get the best market before her rivals could land their catch ashore.

The sail plans of both types were similar, but the banker had a smaller area and rarely carried a main topmast. Large jibs with bonnets, instead of reef points, were carried up to the 1880s and neither set a fore topsail. A typical hull feature, retained down to the present day, was the break in the deck, giving a raised quarter deck abaft the great beam and preventing a sea coming right aft as along a flush deck.

From about 1857, the mania for speed increased to such an extent with the extreme clipper design that the schooners became more and more crank and dangerous. With a straight keel and less and less depth of hold, increased beam was necessary to secure stability and to carry the big sail plan, as fore topsails, outer and flying jibs, and big staysails were

now set. This type sailed very fast on an even keel, but tended to capsize when pressed down and heeled beyond a certain point. Considerable loss of life and property resulted—on one occasion no less than 15 vessels were lost in squally weather in a single night with over 150 men, yet for over 25 years the design remained popular.

Made reefing hazardous

The clipper bows were encumbered with head rails and trail boards; the length of hull had been increased up to 80 ft. with a beam of 21 to 23 ft. Floors were flat with depth of hold varying from 8 ft. to just over 6 ft. in extreme types, while main booms were as much as 22 to 23 ft. beyond the taffrail, making reefing the big mainsails with their three lines of reef points an exceedingly hazardous task.

At length, in 1884, largely as a result of public demand, D. J. Lawlor, a famous designer of pilot boats, well known for their seakeeping abilities, introduced a new and more healthy type, having a straight stem, deep hold, sharp floors and a new type of stern. *Roulette*, the prototype, proved an instant success, being very fast and weatherly; many similar schooners were soon working, being known as "plumb stemmers," but the design did not remain in favour for many years, the last two being built in 1901.

A further increase in length brought many hulls

An auxiliary-powered Banks fishing schooner of the "knock-about" type



The Gloucester

Fishing Schooners—1

to well over 90 ft. L.B.P. Masts were now plumb with the waterline and in winter it was customary to leave the topmasts and jib-boom ashore.

Rivalry in races

The rivalry between Boston and Gloucester captains and the intense interest aroused by the races for the *America* Cup, first by schooners and later by cutters and sloops, led to skippers, eager to have the very best, not hesitating to commission the ablest yacht architects, in spite of their high fees, to draught the lines of their new fishing schooners, and this practice resulted in many epoch making innovations.

In 1886 a new schooner, *Carrie E. Phillips*, was laid down in Story's yard at Essex for a Boston firm. Her lines had been drawn up by Edward Burgess, a young designer who in a few years had come to the forefront of the leading yacht architects with his designs for the successful Cup Defenders' *Puritan* in 1885, *Mayflower* in 1886 and followed by *Volunteer* in 1887. Straight stemmed, the depth of hold was still further increased with sharp floors and pronounced rockered keel.

Best of the bunch

The old-fashioned jib-boom, with its mass of rigging, was abandoned in favour of a spike bowsprit, with a short spreader through the stem. The big jib, which had hitherto been so typical a feature, was replaced by two headsails. Hemp gave place to wire standing rigging and in many other ways the design altered or scrapped earlier ideas.

Before the more conservative fishermen had time to take in the many breath-taking alterations and build similar models, another Burgess design swept the board—the beautiful *Fredonia* with her graceful clipper stem, yachtlike hull with cut-away forefoot, and enormous sail plan some 7,500 sq. ft. in extent. If any fault could be found in this superb creation, it was a lack of cargo capacity in relation to her length. Numerous designers set to work to improve this feature, for the design had caught on, and a large number of exceedingly beautiful schooners soon joined the fleet, and this type remained a favourite for about 15 years.

Length of hull now exceeded 100 ft. with a beam increased to well over 25 ft. Had he lived, Edward Burgess would undoubtedly have become a leading designer, but he died in 1891 with 137 vessels to his credit, 37 steam yachts and three pilot boats.

Some idea of the cost of these commercial schooners can be gained by comparing the cost of the original yacht *America* of 1851, some £4,000, with the £3,000 to £3,500 required for a Burgess-designed fisherman, and the Royal yacht *Britannia* which cost under £8,000. The latter had a sail area of 10,327 sq. ft., compared with *Fredonia's* 7,542 and *Bluenose's* 10,500

sq. ft. Yet the best speed of the cutter yacht was 12 to 13 knots, and the fishing schooner 14 to 16 knots.

With the increase of cold storage facilities salt banking decreased, and every attention was given to the market schooners, which culminated in the superb designs of the early 20th century. In the early 1890s a new designer, T. F. McManus, introduced many fresh features: the modern curved or spoon bow, longer overhangs, and a keel curved from stem to sternpost. His early schooners were named after Indian chiefs and the new type of stem was known locally as the Indian Head.

Design for royalty

It was at once copied by yacht architects, one of the first being G. L. Watson, who used it in 1893 in the wonderful *Britannia*, the famous Royal yacht. At first it was viewed with disfavour, being considered ugly when compared with the clipper bow, but its worth was proved in that practically every succeeding yacht and fishing schooner carried it. Owing to difficulties in arranging the keel blocks when a vessel was hauled up for repairs, the curved keel was modified by Crowninshield, another well-known yacht architect, and a short straight keel aft merged into a sweeping curve up to the bows, and became known as the "fishermen's profile."

These Indian Headers were most successful, being exceedingly fast, weatherly and handy, easy in a seaway and having good carrying capacity.

A typical Boston schooner with her nests of dories amidships is seen in the picture. Note how beautifully her sails set—little wonder that their skippers were proud of such lovely craft. The method of bending the foot of sails to booms is worth noticing, also the tyers for the jibs are flying free from the bowsprit.

Safety at sea

One more striking innovation marked the culmination of the all sail fleet—the McManus-designed "knockabouts." Having observed the dangers of men being washed off bowsprits, when handling the jibs, or being drowned through the footropes breaking, as well as the ever-increasing nuisance caused by this spar in crowded waters, he set to work to plan a hull in which no bowsprit was required, as the bow was drawn out so that the jibstays were brought to the stemhead and the jumbo stay well inboard.

Once again the fishermen took their time before accepting this novel design, but at length one bolder than the rest risked his money and the *Helen B. Thomas* was launched in the early part of 1902 and, proving her worth, was followed by many others.

The first auxiliary was *Helen Miller Gould*, built by John Bishop in the winter of 1899-1900 and fitted with a 150 h.p. Globe engine, giving a speed of 8 knots, but the sail plan was normal, the main boom measuring 70 ft. She had a short life, being destroyed by fire after 18 months. Later, sail plans were cut down and more and more reliance placed on the engine.

● To be continued

Ship modellers' scrapbook

A description of the mizzen mast of Danmark

THE WELL-KNOWN Danish training ship *Danmark* is a classic example of the full-rigged steel sailing ship at the latest period of its development. During one of her visits to London docks I spent a highly enjoyable time on board and was greatly impressed with the perfect condition of everything about the ship—hull, deck fittings, spars, rigging and sails.

The picture on this page was taken looking up the mizzen mast—a component full of interest to the enthusiast.

Mizzen mast construction

The mast itself is a steel tube and continues its circular form through the hounds right up to the cap. The cheeks are steel plates riveted or welded on the sides, and the tressle-trees are of angle section riveted along the upper edge.

The lower mast top is primarily a crescent-shaped frame which rests on the tressle-trees. There are no cross-trees, the frame of the top with its flanged rim being in itself sufficient support.

Futtock shroud details

All shrouds are looped round the mast in the normal fashion, and bolsters are provided for them to rest on where they pass over the tressle-trees. A small Z-shaped bracket on the after side of the masthead keeps the stay in position. The futtock shrouds are iron bars forked at their lower ends where they are bolted to a plate welded to the mast on each side below the cheeks. Their upper ends pass through slots in the rim of the top to receive the lower ends of the bottle screws for the topmast shrouds.

A futtock staff is secured on the inner side where the lower shrouds

*Deckhand's view
of DANMARK'S
mizzen mast*



pass through the futtock shrouds. A rope, with stops on it at intervals, is led from the rim of the top to one of the lower shrouds on each side, probably to assist the young trainees to climb the futtock shrouds into the topmast shrouds.

The American training ship *Eagle* has two such ropes on each side with ratlines across them, presumably with the same object in view.

Wooden slats are bolted across the top in a fore-and-aft direction to form a platform, with spaces between for drainage. The inner slats are provided with holes to act as fairleads for the buntlines and clewlines and other items of rigging coming down from above. The cap is furnished with eyes on each side to receive the upper ends of the backstays.

Crosstrees alternative

At the head of the topmast, instead of the more usual crosstrees, there is a crescent-shaped top with cheeks and tressle-trees of similar shape but smaller than those in the lower tops.

A pair of backstays is secured to eyes on the cheeks on either side of the mast.

The spanker gaff appears prominently in the picture. A forked bracket is riveted to the mast on the after side just below the futtock band. This receives the swivel block, which also has a forked end, which in turn receives the eye formed in the rounded end of the spanker gaff.

The swivel block swings on a vertical pin in the mast bracket and carries a horizontal pin in its forked end, on which the gaff may swing up or down. Thus the gaff may be moved in any direction as required.

Securing the sail

A track is formed on the underside of the gaff to receive the head of the sail. The shackle for the outhaul is seen in the peak of the sail and also attached to the peak cringle is the downhaul, the leading block for which is seen on the side of the mast level with the bracket for the gaff.

The throat of the spanker is secured to this bracket by means of a rope through the throat cringle, as can be seen on the picture, and the track for the luff of the sail can just be discerned on the mast, almost hidden by the sail. The sail is, of course, brailled in to the mast.—E.B. ⚓

Making blocks for miniatures

E. BAYNES ROCK describes the tools and methods used for making these small components

ONE OF THE major snags in making model ships—at least as far as I am concerned—is the imitation of blocks in a size consistent with the scale of the work in hand.

They can, of course, be purchased down to about $\frac{1}{8}$ in. in length but in my opinion, buying fittings destroys half the pleasure of one's work—and showing the model when completed as “all my own work” is not absolutely true. I have used minute shot worked to shape, small beads and have even tried apple pips! But I always hated the result.

This year when I decided to make a miniature of a Dutch “Boeier” I made up my mind that somehow or other I would find a way to make blocks as nearly in keeping with the size of the model as possible. First I had to decide on the material to be used. Boxwood? No. Lead? No. What about plastic? There certainly was no harm in trying plastic, but what sort?—there are so many.

I tried Barbola, but that was no good. And then I recalled that there were, among my wife's vast collection of knitting-needles, several very flexible specimens of yellow plastic—the colour I wanted!

Clamping gadget

I roughly tested the plastic to find out whether it was likely to split or chip, and whether I could drill it satisfactorily. In every way I found it excellent for my purpose. The only point was how to hold it while working. An ordinary vice was out of the question—far too heavy-handed. But by good fortune I had a small supply of box-wood and from a piece of this I made a clamping gadget which I fixed to my drawing desk. With the aid of a screw-eye it is quite simple to make—and can be fashioned from any kind of hard wood.

Now let me refer to the tools that are required to do satisfactory work. The principal one is the drill. I found it impossible to obtain drills fine enough in my neighbourhood so that became another problem to overcome. I tried to make do with

entomological pins which are very fine, but they were far too soft. I then ravaged the family workbox and filched a small selection of fine needles. I cut off the eye with about $\frac{1}{8}$ in. of the shank and about a $\frac{1}{4}$ in. of the point. This I gripped in the chuck of a small tubular pin-vice, point end upwards (in the tube) and protruding about half an inch.

Holding the pin-vice (this is very important) with one of the four slots of the chuck perpendicular and the needle nearly, but not quite, flat on a fine grain hone, I gave it 40 light rubs. Then I turned the pin-vice half round, so that the opposite slot in the chuck was perpendicular, and gave that side 40 strokes, thus making, as it were, a screwdriver point. As this was not quite sharp I gave each side another 10 strokes.

This, when seen under a magnifying-glass, resembled a minute carving chisel. To point it I set the needle in the chuck, protruding about $\frac{3}{8}$ in. and bevelled off one half of the sharpened edge at a slight angle with about 10 strokes on the hone. Then, giving it a half turn, I did the same to the other half.

This may all sound very complicated but really it is quite a simple process

if one is blessed, as I am, with good sight and is used to handling tools.

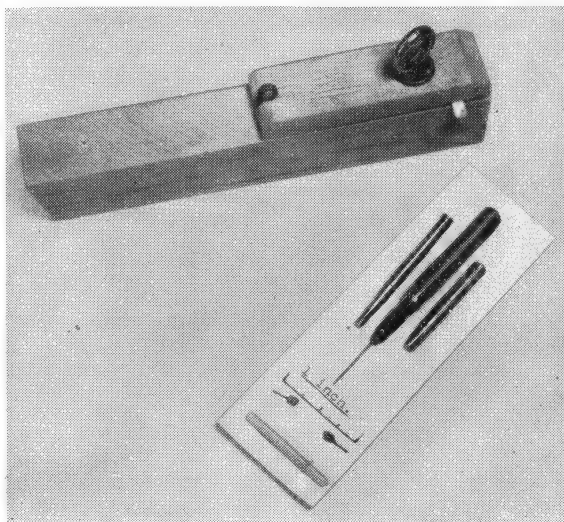
Making “prickers”

There are two more small home-made tools that are useful. For want of a better name I call them “prickers,” and they are also made with needles. The first requires a needle the same size as the drill already made. It is set in a miniature wooden handle about 2 in. long, protruding about $\frac{1}{2}$ in. and three or four turns of very fine wire bound round to make a ferrule. Another made in the same way but with a stronger needle, and the shank ground square (using the pin-vice) to make a very fine broach for clearing the holes, if necessary, after drilling.

Tools for the job

It will be noticed that there are two small oval indentations on the tail-end of the wooden clamp. These are made with two small punches filed from suitably sized wire nails cut to about 2 in. long. I made these just a fraction larger than the size of the blocks I wanted and not more than $\frac{1}{32}$ in. deep for the smaller blocks.

As regards other ordinary tools I use a hand-drill able to take the pin-



The author's jig and drill, with specimens of his blocks

vice in its chuck, a small, very fine-toothed saw, a pair of small, flat-pointed pliers, with wire cutters, a small (second cut) file and a half-round mouse-tail file is also useful.

For stropping, a supply of the finest copper wire must be on hand. This I obtained by unravelling a piece of old lighting flex and cutting it into lengths of about 12 in.

Now let us get to work. Clamp to the bench or table the gadget so that it points about 45 deg. towards your right elbow. Then take the knitting-needle and file about an inch of the sawn-off end to form an oval section, the length of the block being the diameter of the untouched plastic. Set this in the jaw of the clamp, leaving about $\frac{1}{8}$ in. protruding horizontally, to the right. Be very careful to keep the filed, flatter side uppermost.

Set the needle drill so that it protrudes about $\frac{1}{2}$ in. from the nose of the pin-vice chuck. It is possible to drill the hole by twisting the pin-vice between the fingers, but I prefer to set the pin-vice in the jaws of the hand-drill as I find it is easier to keep the bore upright. The weight of the drill is just sufficient to drive comfortably through the plastic.

It now requires care to set the point of the spear-drill on the exact spot where the hole should be—slightly nearer what will be, in the finished article, the head of the block. Do not press the drill or it may run amok or break.

The hole completed, file away the sawn-end to rather less than $\frac{1}{8}$ in. from the centre line of the hole just bored; then, before releasing the knitting-needle from the clamp, slightly score the side of the pulley longitudinally and centrally with either the fine-toothed saw or the half-round (mouse-tail) file, to make a bed for the strop on that side. Cut away the half-finished block.

Now we come to use the "pricker" to which I have already referred, and the indentations on the gadget. Pierce the half-made block by pushing the point of the needle pricker as far as halfway through. Then lay the block in the indentation that should just encircle it and press it down firmly (but not too heavily or you will break the needle) finished side down. This will grip it while you carefully file to a finished thickness to equal the opposite half of the pulley. Then score a shallow groove lengthways for the stropping.

Stropping the block

If my hopes and instructions have matured, you will now have a miniature block ready for stropping. This may be found rather a tricky job at first, but a little practice will soon overcome the difficulty.


Take a few inches of a single strand of the fine wire in the left hand, and the block skewered on the pricker, with the head (hole-end) towards you. Lay the wire lengthways across the indentation into which the block should

fit easily, and press the block on to it. Still holding it firm, bring the loose end of the wire over and, with the finger, press it into its groove as firmly as possible. Remove the pricker and take the block between the thumb and finger of the right hand, grip the doubled wire as firmly as possible in the left thumb and finger and, pulling it tight, twist the block away from you. This will—or should—grip the block between the fold of the wire.

Finally, with the point of the pliers, tighten the twist of the wire, taking care that you do not overdo the strain and break it. If you have a tube of Durofix or similar adhesive a touch on both sides of the block in the strop-grooves is advisable before stropping, as it helps considerably in keeping the block from slipping its moorings when rigging . . . and after.

In that case I have found from experience that it is better to make another block and new stropping and cordage than try to get the old one, hanging on a rope, back into position in the old strop.

One piece of advice. I have found by experience that it is really better to leave the stropping until the block is actually required as the length of wire needed may vary, and single or doubled stropping desirable. Double blocks can, of course, be made in the same manner by drilling two holes side by side instead of only one.

With a little practice the job can be accomplished quite quickly. 

TRADE

TOPICS

BASSETT-LOWKE LTD. have always provided a good service for ship modellers and their latest model shipping and engineering catalogue shows that their services are being improved and extended.

The well-known motor boat *Streamliner* is now offered with electric drive as an alternative to steam, with a view to its greater suitability for radio control. The plastic blocks, deadeyes and portholes are still available.

The famous Stuart No. 10 and Double 10 engines are available as finished models as well as in sets of castings and parts for ready assembly. A paraffin burner specially suitable for firing marine boilers is on sale.

A fine range of designs for models of ships, many from the board of Harold A. Underhill, is included in the

catalogue. These range from R.M.S. *Queen Elizabeth* down to the smallest cabin cruisers and include cargo ships, trawlers, H.M.Y. *Britannia* and naval vessels. There is also a large range of sailing ships both square and fore-and-aft rigged.

These are all new additions since the previous catalogue was issued in 1954. The standard range of ships' fittings, including model yachts and their fittings, is, of course, still available. There is an increased selection of materials and tools for the ship model maker, including an interesting set of wood carving tools.

* * *

MERSEY MARINE MODELS have recently produced a comprehensive catalogue of their goods, which appears to contain everything required by the ship model builder.

Kits for models of liners, historical ships, cabin cruisers, and so on are listed. Engines—steam, petrol and diesel—and a wide range of electric motors are shown, with propellers, shafts, couplings and all necessary fittings. Anchors, winches, sails and

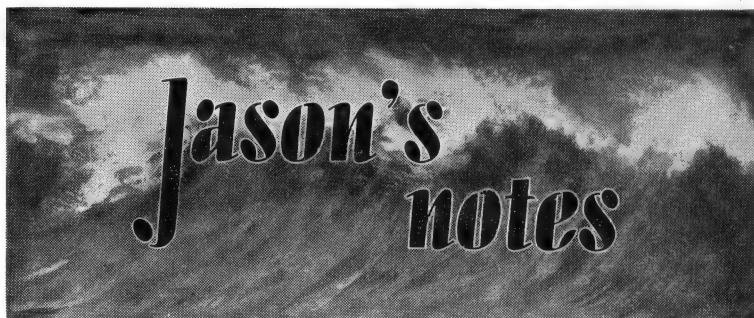
stanchions, steering wheels, funnels, ventilators, etc., are listed in a bewildering variety of types and sizes, as are cannon lanterns and old style anchors for historical ships.

Radio control equipment is an important feature and nearly every item on the market is included. Also listed are paints and brushes, glues and cements.

A notable feature is that materials, both wood and metal, in a surprising variety of sizes are obtainable—a service which has been considerably restricted since the war. Tools of all kinds are listed and illustrated and a careful study of the illustrations will give ideas to most model makers. Another feature of the catalogue is the number of practical hints it contains on the use of specific materials.

Finally, but without by any means exhausting the list, there is an extensive range of books on ship modelling and a great number of drawings for models of ships of all types. In short, this is the most comprehensive range of marine accessories ever seen in a catalogue, which at its price of 2s. 6d. (3s. post paid) should be in every model maker's possession.

A round-up of ship modelling news and views—with a reminder that rallies are starting



HIGH SUMMER is upon us and this month sees the annual rally for model sailing ships of all kinds to be held at the Round Pond, Kensington Gardens, London.

The Round Pond is close to the Broad Walk which runs from Queensway Underground Station on the Bayswater Road to Palace Gate, Kensington. The date is Sunday, June 17, and from 10 a.m. onwards there's always something happening. If you have anything that sails why not bring it along? There are four classes. Windjammers, usually meaning any square-rigged vessel; Thames barges to a scale of $\frac{1}{2}$ in. to the ft.; fore and aft rigged vessels which include Thames barges outside the above scale and finally native craft of all kinds. The main event is the race for Thames barge models at 3 p.m. This is really a thrilling affair because the entries are faithful replicas of their prototypes and in certain conditions it is quite impossible to tell from photographs one from t'other.

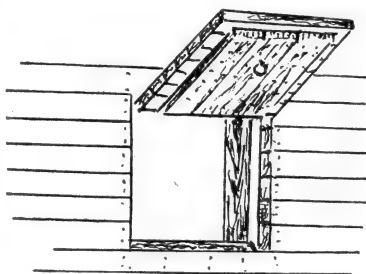
Summer outings

MANY YEARS ago I advocated an outdoor programme for the summer months. The Thames Ship-lovers are planning an ambitious syllabus. If you are a lone wolf or even an established "society man" and you hope to be in London this summer, why not drop a line to Mr. E. Randall, 24, Winter Avenue, East Ham, E.6, for a programme of events? But don't forget a stamped and addressed foolscap envelope. Everyone is welcome at these affairs. Birmingham, most summers, have a trip by coach to such places as Merseyside and Bristol. Like Londoners they like to have their womenfolk along. Sheffield usually concentrates on the M.E. Exhibition in London. Incidentally, Sheffield claims to run on the lowest subscription in the country. Many societies up and down the country include a

visit or two to a nearby shipyard or dock. The next best thing to all this is a talk to your society (with sketches and snaps) about the ship you saw on your holiday. Your secretary will be pleased.

Tudor gunports

A READER, MR. WILL JUDGE of Beccles in Suffolk, puts forward some interesting speculations about Tudor gunport lids. I do not find myself in agreement with all he says but his letter and sketch raise matters of research. He has completed the hull of *Elizabeth Jonas* in accordance with the plans and lines together with a picture of the model in the Science Museum. This picture shows the port lid with the rabbet all round. He goes on to show why he thinks it correct. His background?—he is an



A Tudor gunport lid by Will Judge

old ship's joiner. The lid was "skin" thickness backed by a vertical set of boards, the whole clenched to the hinges, rested upon the lintels and sill of the port-hole. He argues against "single skin lid" only because dowelling was not practised in Tudor times nor was it practical to hold the skin boards on the hinges without backing, for "*I know from my youthful experience as a volunteer artillery gun layer, firing many rounds from a 64-pounder gun of Nelson type the shock*

of discharge" would have dropped them off.

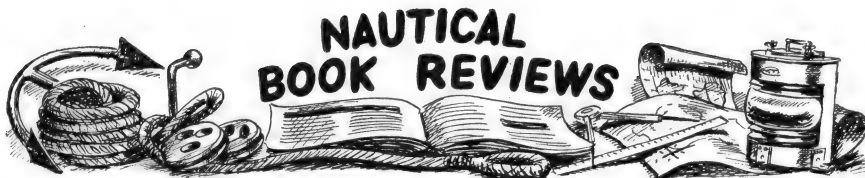
Ye gods and guided missiles! There cannot be many such gun layers left. *Norfolk Nautical Research Society* is to be congratulated on having such a member. Thank you Mr. Judge!

The Science Museum

MY OLD friend, Mr. White of the Science Museum, confirmed that so far as he knew there was no evidence of such details of Tudor shipwright. One has to get into the 18th century. Personally I'd be inclined to chance the evidence on a dockyard model, the earliest of which dates from the middle of the 17th century. But the *Elizabeth Jonas* is a century earlier and scarcely more than the century preceding, gunport lids were first introduced. The King's ships in early Tudor times differed but little from merchants' ships except on the very rare occasions when special ships were built for the King. The art and practice of the shipwright would therefore be common to both services. The innovation of piercing holes in the actual hull of a ship would surely tend to make experimentation go hand in hand with caution. The absence of evidence throws us back on the practical man. Hence my belief and admiration in and of Will Judge.

Hammersmith's exhibitions

THE HARD-WORKING society at Hammersmith has held yet another exhibition but this time it was the usual annual miniature competition for the Chairman's Cup which was won by M. Cook for his model of an East Anglian motor fishing boat. I did not see the exhibition myself but I'm sure the standard has not fallen below good. The chairman tells me that this year even more than in previous years there was a large number of warship entries. ⚓



THEIR LAWFUL OCCASIONS, by Captain Herbert W. Edwards, R.N.(Retd.), published by Percival Marshall and Co. Ltd., London. Price 15s.

The author's previous book "Under Four Flags," describing his experiences in sail, was so well received that there was a general demand for more reminiscences from the same pen. These are supplied in the present book and, as the writer's subsequent career was no ordinary one, this is no ordinary tale. Readers of the earlier story will remember that he was successful in getting a transfer to the Royal Navy in the pre-1914 war period. In the Navy things were moving fast in view of the impending threat of war, and Lieut. Edwards had a number of appointments in quick succession. The incidents in which he was involved on the outbreak of the war (1914) give one a very vivid idea of what it meant to those concerned.

One of his early assignments was to take charge of a 9.2 in. naval gun in Flanders. While on this job he contacted an old friend who was now in the R.N.A.S. Between them they arranged for the aircraft to observe the effects of his gunfire, and in this way achieved what must have been one of the earliest experiments with directed gunfire. However, he was wounded when his gun received a direct hit, with the result that he was sent back to England and to hospital. After a quick recovery he was posted to H.M.S. *Arethusa*, the flagship of Commodore (as he was then) Reginald Tyrwhitt, of which he soon became Gunnery Officer. His next appointment was to be Gunnery Officer to the Harwich destroyer *Flotilla*; but the war was wearing to its end, and, being due to attend a conference at the Admiralty on November 11, he found himself in the midst of the Armistice celebrations. His account of that memorable day is well worth reading. Shortly after, he was present at the surrender of the German submarine force to Admiral Tyrwhitt at a rendezvous in the North Sea. At his next appointment to a R.N. Training Establishment at Shotley he first encountered the W.R.N.S., and recounts some amusing adventures.

On his promotion to Lieutenant Commander he was made Executive Officer of H.M.S. *Chiverton*, a cruiser of 1,000 tons, and thus went to sea

again. After two years of this he was promoted Commander and placed on the retired list. He was about 45 at the time. However, nothing daunted, he took a job in a travel agency. He was recalled at the outbreak of the 1939-45 war and held a number of important Staff appointments and in the course of his duties met many notable people. While captain of H.M.S. *Irwell*, Headquarters ship of the A.S.D.I.C. Trawler Convoy Force, he acted as host to the late King George VI and H.M. Queen Elizabeth (the present Queen Mother), during an official visit. His was indeed a full life, and with his natural gift of expression his book is one of the most interesting and enjoyable we have read for a long time.

SOLENT HARBOURS

Harbours of the Solent by John Scott Hughes, published by Christopher Johnson Ltd., 11/14, Stanhope Mews West, London, S.W.7. Price 15s. net.

The latest addition to the popular "Harbour" series of books deals with the Solent and its associated waters, and is one of the best of the series. For one thing, whereas some of the others dealt with derelict harbours and decaying trades, in this one there is an air of prosperity throughout. In the yachting centres, where the wealth and luxury of the spacious Victorian days have faded into the past, they have been replaced by a new and thriving industry in which young enthusiasts are buying and sailing small craft. Although the author has some nostalgic moments for the old days, he is young at heart, and his pleasure at the new developments appears throughout the book. We agree with him, however, in his pride in Lord Dunraven's statement that, in the pre first world war period, the British yachting fleet gave employment to several thousand of the "smartest fore-and-aft sailors in the world," and in the fact that he himself was a unit among them. But the author's appreciation of the historic nature of these waters equals his enthusiasm for yachting. He speaks of the Nelson period as being the climactic hour of the age of sail, and states "we are without any experience which could assist us to form a veritable conception of the grace, the might, and the beauty of a fleet of

first-rates and frigates, or the dignity and stateliness of their all but silent motion." The author's references to Nelson and his times, to Tennyson composing "Crossing the Bar," and to the burial of the famous marine artist W. L. Wyllie, whose body was taken by a funeral barge from his home at the Sally Port to the water-gate of Portchester Castle, give some indication of how these waters are woven into the web of our country's story.


FOUR-MASTED BARGES

Nautical Research Journal. Vol. 8, No. 1, published by The Nautical Research Guild, Hon. Secretary: James W. Harbin, Jun., 4110, Beall Street, Landover Hills, Maryland, U.S.A.

The principal feature of this issue is the description, with photographs, of the big four masted barges *Acme*, *Atlas*, *Astral* and *William P. Frye*, built in 1900-2 by A. Sewell and Co., Bath, Maine. These were the last deep-water square-rigged vessels built in the United States, and, being built of steel, bore a closer resemblance to the British square-riggers than did most U.S. built ships. Dimensions of both hulls and spars are given, and the description, together with three large photos of the ships, and one of a deck view, gives information which will be useful to the model maker. Another valuable feature is the set of hull lines, with profile or sheer-plan showing constructional details, of a lugger 66 ft. 7 in. long together with five photographs of a finished model. The journal is issued free to members of the guild.

NAVAL ENGINEERING

Naval Marine Engineering Practice, published by the Admiralty, price 25s.

Although prepared primarily for the training of engine room artificers and mechanics, this handsome volume is now available for all who need a reference work on Royal Naval engineering. It illustrates and describes the construction, operation and maintenance of the machinery for which the engine room staff is responsible. The sketches and notes refer to typical machines most likely to be met with in different classes of ships, and constitute a valuable guide to basic principles. 

● Letters of general interest on maritime matters are welcomed. A *nom de plume* may be used if desired, but the name and address of the sender must accompany the letter. The Editor does not accept responsibility for the views expressed by correspondents.

SIR,—I have recently received my copy of the January issue and H. P. Dunstan's letter has prompted me to write to you as I am in (or rather out of!) the same boat as Mr. Dunstan in being a lone modeller—but at least he has water in N. Rhodesia.

I enclose a photograph of two of my models. The little twin-hull craft is a development of my own design on which I hope to carry out further experiments, as it is so successful to date.

For my next project I would like to be put in touch with anyone who has experience of sailing model square riggers. The model is a four-masted barque based on *Parma* to be controlled by radio. Most of the details have been worked out, but any first-hand information will be most helpful. It is hoped to be able to make the model as authentic as possible and include as much detail as possible.

I would, before I close, like to thank you for the excellent magazine you give us ship modellers.
Windhoek, F. W. BISHOP.
S.W. Africa.

● Letters will be forwarded.—EDITOR.

GERMAN SHIPMODELLER

SIR,—I have read with great interest your February issue of SHIPS AND

SHIP MODELS. Unfortunately we have not in Western Germany such magazines; plans and lines for ship models are not available. I should like to say that I build with pleasure ship models. My last model was the famous tea-clipper *Cutty Sark* from plans by Harold A. Underhill, Glasgow, and I enclose a photograph. Now I am building a 40-gun frigate of the 18th century.

I should be glad if somebody would be so kind as to correspond with me about ship models, and by this way I should be able to learn better the English language.

Hamburg. WOLFGANG LUCHT.

● Letters will be forwarded.—EDITOR.

DIESEL GUNBOAT

SIR,—I am a beginner in the world of model power boat, although I have been a regular reader of *Model Engineer* for the last four years. I have seen in its pages a great variety of M.T.B.s, A.S.R. launches, gunboats, submarines, and in fact almost every type of unit used by the Royal Navy, produced in excellent model form. The photograph enclosed is a U.S.A. P.T. boat (patrol-torpedo).

As far as I have been able to ascertain, the prototype is of post-war construction with an aluminium hull and a variety of armament accord-

ing to the nature of duties it is employed upon—as usual, its gun details, etc., are secret. Mainly for this reason I have produced my model version as a patrol craft, carrying two 40 mm. guns, two twin 20 mm. Oerlikons and two 0.5 in. machine guns, the latter being omitted during sailing because of their fragile nature in a model of this size.

The model is 30 in. long with a 9 in. beam amidships and is powered by a 2½ c.c. diesel type engine. It performs most realistically on the water and is most satisfying to watch, considering it is my first attempt at a model of this kind.

I would like to add that this model is not freelance and came originally in scaled down plan form in an American magazine about two years ago.

Anerley, S.E.20.

J. R. BURR.

TRAWLER QUERY

SIR,—In reply to E. Wilson's trawler query (March issue) my experience might be useful. I have a 36 in. boat and use three twin-cell batteries giving 9 volts and take direct drive from a Frog Whirlwind motor which has a very low consumption.

The boat is now six years old and must have travelled dozens of miles. It is fast, and the twin-cell cycle batteries will give hours of running. I use the batteries as the ballast.

Newcastle upon Tyne, 6. R. WRIGHT.

Wolfgang Lucht's model of CUTTY SARK. See "German shipmodeller"



"INDEFATIGABLE" NEWS

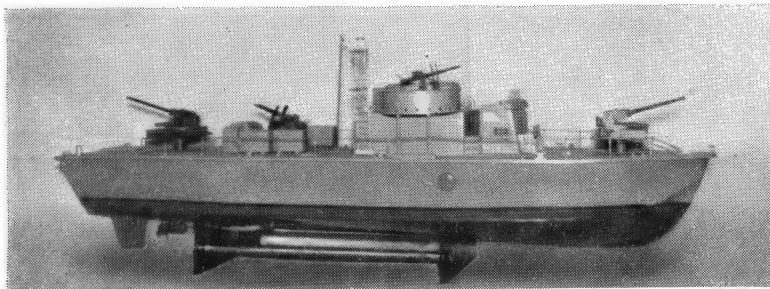
SIR,—I wonder if I may return, briefly, to the fray in the *Indefatigable* affair. I notice one correspondent in the March issue concludes that the ship in question is not *Indefatigable* owing to the alleged absence of steam-pipes before the funnels but is probably *Australia* or *New Zealand*.

I do not think we can accept this, however, as the photo does, in fact, show two steam-pipes before the second funnel and one before the third, features actually common to all three ships.

Australia and *New Zealand* were virtually identical as completed, the principal differences in appearance from *Indefatigable* being as follows:—

Indefatigable: (a) Short upper bridge wings. (b) Yard low on fore topmast. (c) Control top and gaff on mainmast.

Australia and *New Zealand*: (a) Long



A U.S. Navy patrol-torpedo boat—the work of a new reader. See “Diesel gunboat”

bridge wings. (b) Yard high. (c) No control top or gaff on mainmast.

Now the ship in question is obviously one of these three and I suggest that the fact that the picture distinctly shows the short bridge wings and absence of control top on mainmast identifies her as *Indefatigable* beyond any reasonable doubt.

I am offering these comments in the hope that they might be of some general interest quite apart from the slight controversy involved.

Hamilton, DERISLES TRIMMINGHAM.
Bermuda.

DRAWING A SHIP'S LINES

SIR,—I read with interest “Ship-builder’s” letter in your April issue regarding the lifting of offsets from a slipped vessel and I must hasten to add that all your correspondent’s statements are correct.

The example he states is, I assume, for a raked keel vessel, and in such a case the frames are always square to the designed bead waterline and never to the keel, although most modern ships are designed to a level keel draft and hence their frames will be square to the keel.

Having, in the course of many repair jobs, had to obtain lines plans from existing vessels, I have always found it advisable to mark the stations on the keel, as it is only there that one can accurately mark out and subdivide the between perpendiculars length, and by plumbing locate their positions on the sheerline.

If the vessel is on a slipway the declivity of the slip can easily be found and by simple calculation the angle between the plumbed sections and the keel can be found; these body sections should then be drawn down and a faired lines plan drawn up.

This lines plan will give a distorted distribution of fullness, having, as your correspondent stated, a fuller pre-body and a finer after-body than the actual vessel. To remedy this and arrive at the correct lines, all that is required is to draw lines on the sheer

plan at right angles to the keel where the stations cut the heel.

The points where these constructed lines cut the waterlines and futtocks will give the spots for the correct body sections and on completion of the body plan a final faired set of accurate lines can be drawn.

Glasgow. “NAVAL ARCHITECT.”

COMMENTS ON CONTENTS

SIR,—Reading the book reviews in the April number of SHIPS AND SHIP MODELS I noticed one on “Bock’s World Shipping.” As I should like to purchase a copy I wonder if you could tell me who are the agents for this book in England? Could you also quote me the exact price please?

Could I put a plug in for the feature Fleet Reviews which has been missing since February and which I found most informative. I also like Laurence Dunn’s articles on individual ships which has returned after a two months’ absence, and Ships in the News (could this be expanded please?). I like the new feature From a Marine Sketchbook. Carry on the good work. Dewsbury. F. H. BLACKBURN.

● The International Book Shop Ltd., 52, Charing Cross Road, London, W.C.2, should be able to supply this

book. The price given was obtained from information supplied with the book.—EDITOR.

FORWARD—NOT BACK

SIR,—As a comparatively new reader of your magazine—which I wish I had met earlier—there is one aspect which I find depressing. That is the constant harking back to the past. Must we revere sail and adulate steam!

No doubt we shall be worshipping diesels as they give way to atom power, while we shall go into a frenzy as tugs become a thing of the past. Let ship modellers look forward! Give them news and views of the ships of the future and let us try to make intelligent models of them.

Must da Vinci remain for ever the only man who was a few hundred years ahead of his time?
Glasgow. J. C. KNOX.

MODELLING “LION”

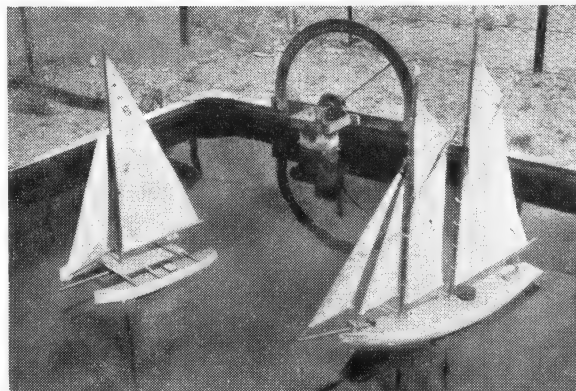
SIR,—I was interested in Norman Ough’s drawings of H.M.S. *Lion*, in the May issue.

The following information may be of interest to those readers who are thinking of building a model of her.

During her trials *Lion*’s maximum speed was 31.7 knots by patent log at full power, with a mean of 29 knots. Then it was discovered that the heat from the fore funnel was so great that the crew of the fire-control position—carried at that time on a tripod mast forward of the funnel—found it almost impossible to stay at their posts. Also, on the navigating bridge, the instruments were badly affected by the heat.

These defects made modifications essential. The tripod mast was removed, the fore funnel taken much further back and the height of all the funnels was increased enormously.

North Ferriby, PETER G. WARHAM.
E. Yorks.



Two widely different craft from South Africa. See first letter

News from the clubs

BRITISH (M.Y.A.) Open Championships, 1956, for 10-raters, will be held at Fleetwood from Monday, July 9, to Saturday, July 14. Last day of entry: June 11. Full particulars may be obtained from Hon. secretary: P. L. WINDSOR, 31, Galloway Road, Fleetwood, Lancs.

THAMES SHIPLOVERS' AND SHIP MODEL SOCIETY

The annual prototype sailing rally will be held on Sunday, June 17, at the Round Pond, Kensington Gardens, London, at 11 a.m. This is one of the most popular events of the year and provides a unique opportunity for seeing models of square riggers, spritsail barges and other prototypes sailing and racing. Rally secretary: JOHN FISHER, 19, The Grove, Greenford, Middlesex.

INTERNATIONAL RADIO CONTROLLED MODELS SOCIETY

The annual contest for radio controlled model boats will be held on Monday and Tuesday, August 6 and 7, at the Valley Pool, Bournville, Birmingham. Hon. competition secretary: H. CROUCHER, 27, St. John's Road, Sparkhill, Birmingham, 11.

WEMBLEY SHIP MODEL SOCIETY

The meetings for June are as follows: Monday, June 11. A talk—"Miniature Ship Modelling"—by J. L. Bowen. Monday, June 25. E. Bowness will talk about the restoration of contemporary ship models. Hon. secretary: C. SESTON, 8, Albert Road, Southall, Middlesex.

Y.M. 6m. O.A. AND SOUTH LONDON M.Y.C.

The fixtures for June are as follows: Sunday, June 10. Class "M" Team Race v. Hove & Brighton M.Y.C. at Hove. Sunday, June 24. Class "A" Jubilee Cup (Open). In each case racing starts at 10.30 a.m. Hon. secretary (Y.M. 6m. O.A.): H. D. HADFIELD, 132, Westbourne Grove, Westcliff-on-Sea, Essex.

POOLE M.Y. AND P.B. CLUB

The fixtures for June are as follows: Sunday, June 3. Ennis Cup, "M" class. Sunday, June 10. Coronet Points, "M" class. Sunday, June 17. "M" v. 10R. Club. Two day Radio Regatta. Saturday, June 23, and Sunday, June 24. Open to all radio-controlled model yachts, diesel, steam, glow-plug and electric boats. In each case racing starts at 10.30 a.m. Hon. secretary: W. L. PERRETT, 46, Cranbrook Road, Parkstone, Poole, Dorset.

THE THAMES GROUP MARINE MODELLING SOCIETY

The meetings for June are as follows: Saturday, June 2. Business evening. Saturday, June 16. A talk—"Paint Finishes for Model Ships"—by the secretary. Both these meetings will take place at the Terrace Hotel, Gravesend, at 7.45 p.m. Membership now covers Bexleyheath,



An American Tid class steam tug, built by W. E. Barnes, of Wilmslow, which received an award at the Northern Models Exhibition at Manchester

Dartford, Gravesend, Strood (Kent) and Grays (Essex) and members are welcome from these areas.

Hon. secretary: A. O. POLLARD, JNR., The Mission House, Bawley Bay, Royal Pier Road, Gravesend, Kent.

HOVE & BRIGHTON M.Y.C.

The fixtures for June are as follows: Sunday, June 3. Hove Corporation Trophy. "M" class. Sunday, June 10. Y.M. 6m. O.A. "M" class. Sunday, June 17. Baroness De Chassiron Trophy. 10-raters. Sunday, June 24. Open Race at Gosport. "M" class. Model Engineers. Hon. secretary: F. JENNINGS, Ardingly College, Haywards Heath, Sussex.

BRISTOL SHIP MODEL CLUB

On Tuesday, June 12, Messrs. Greenham and Ralls will give a talk on working model hulls. Hon. secretary: A. RALLS, 8, Kenmore Crescent, Filton, Bristol (phone: Filton 2148).

SOUTH LONDON MODEL SHIP SOCIETY

The meetings for June are as follows: Thursday, June 7. Club night. Thursday, June 21. A talk will be given by J. B. Jenkinson on tools and gadgets for the ship model maker. Hon. secretary: S. W. REEVE, 23, Windermere Road, Coulsdon, Surrey.

FLEETWOOD M.Y. & P.B. CLUB

The fixtures for June are as follows: Saturday, June 2. Spoon Race, "M" class. Sunday, June 3. Heyes Trophy, "A" class. Sunday, June 10. Williams Trophy. "M" class. Sunday, June 17. Power Boat Section. Sunday, June 24. Mayoral Cup. "A" class. Saturday, June 30. Topham Cup (Jr.). "M" class. Hon. secretary: P. L. WINDSOR, 31, Galloway Road, Fleetwood, Lancs.

HAMMERSMITH SHIP MODEL SOCIETY

The meetings for June are as follows: Tuesday, June 5. Stories of the Sea. Tuesday, June 19. "Seen on the Solent." An illustrated talk with colour slides by L. C. Boyce. Open Night. Members of other societies welcomed. Hon. secretary: H. J. COSTER, 98, Craven Park, Harlesden, N.W.10.

NORTHERN POWER BOAT CLUB, GLASGOW

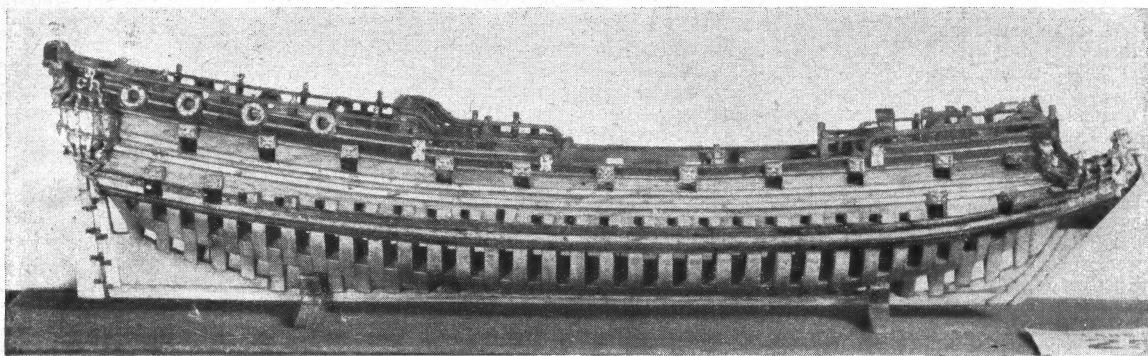
Those interested in power boats and hydroplanes should support this newly-formed club. Full information from the hon. secretary: W. G. Sutherland, 20, Liberton Street, Glasgow.

NORFOLK NAUTICAL RESEARCH SOCIETY

An all day trip in the Trust wherry *Albion* has been arranged for Sunday, June 17, sailing from Horning Ferry at 11 a.m. and returning to the same point. Nat Bircham will be in charge. The expedition will sail only if there is sufficient support. Further particulars may be obtained from JOHN F. C. MILLS, hon. secretary and treasurer, Opie House, Castle Meadow, Norwich. All applications must be sent in before June 8.

THE RAMSGATE AND DISTRICT CLUB

The club have now settled in their new H.Q. at the rear of the fire station in Effingham Street, Ramsgate. The entire premises have been rewired for electricity and one end of the L-shaped structure has been partitioned off to form a cosy library-cum-council room. There is also a spacious room containing the "OO" layout, giving a 3 ft. clearance around each side, also a roomy workshop complete with lathes, benches, compressed air equipment, tools and materials, sufficient to gladden the heart of any model worker. The club's premises are open every Wednesday and Friday evening from 7.30 to 9.30 and all who are interested in modelling or handicrafts are specially welcome. A cordial invitation is also extended to members of fellow clubs.



The author's model of the 1676 CHARLES GALLEY, details of which were found by the methods outlined in this article

Facts and fantasies

T. L. WALL explodes some fallacies concerning old ships
and suggests methods of ensuring accuracy in modelling them

NOT THE LEAST part of the pleasure in building early ship models lies in the preliminary research, and some research always seems to be necessary.

During the seventeenth (or early eighteenth) century, the Dunkirkers built some very fast privateers which took tea with our merchant shipping, and we had no frigates fast enough to catch them and although I have read somewhere that we captured one I can't find the reference. I have always wanted to build one—it would be fun arguing about it afterwards!

There are lots of traps though for the unwary, but it is all part of the game—take pictures for example. As a tribe, artists are sometimes inclined to over-emphasise the thing that interests them, and, conversely, to be vague about what does not. It is all very trying, but if one argues with them they say that that is how they see it, and if you don't like it you should buy a photograph.

To many artists (and perhaps even more model makers) the highly ornate and decorated beaks of seventeenth century ships must have taken their eye to the exclusion of much of the rest, and so they drew and made them. In some contemporary models, the decorated beak takes up about one third of the length of the ship, which is such an obvious exaggeration that it is recognised as such—but it does serve as a warning. There are others about which it is not possible to be so sure; the degree of exaggeration varies.

Another catch lies in what are described as "votive models." In many of these the masts appear to be far too tall—they are, and there is a reason for it. These models are a thanks offering, made as the result of a vow, for some escape from peril at sea, and are meant to be suspended from a church roof and looked at from below. The result is that, seen from such a viewpoint, the masts are fore-shortened and appear to be the correct height.

Simple as that. As it seems unlikely that the rules of perspective would be known to seamen, the assumption is that they were made by some professional who specialised in such models.

Heart of the system

Among my prized possessions are two notebooks which I have kept for a long time, though I wish they had been started much earlier. Whenever I go to a museum to see how something was done in contemporary models, I make a rough sketch with notes and then transfer it to the permanent record at home. Nobody can carry more than a limited amount in his head, and that only for a short time, so such a record is invaluable. It is well to make a note of everything one wants to find out, or one arrives home to find a lot has been missed; at least that is what invariably happens to me!

Photographs are useful, up to a point, but detailed sketches showing just what is wanted are more so.

As an example of what I mean take the width of the various rails to the figurehead. I have no draft which shows this and few photographs do, but in a visit to South Kensington or the National Maritime one can make a few detailed sketches covering the various fashions and periods which will provide a permanent record always to hand. Head-rails are a good example because they are deceptive. They taper and are wider at the after end than one might think, also the mouldings vary from rail to rail.

The other notebook is divided into sections under letters of the alphabet, so many pages to each letter, cut out at the sides so that the letters can be seen, like an address book. Whenever anything turns up in my reading which is likely to be useful, down it goes into the book, whether it is wanted at the time or not, together with a reference as to where it came from.

The system in action

I once wanted to know the armament of a 1676 ship, the *Charles Galley*. That is on record, so there was no difficulty there. Her heaviest guns were six demi-culverins, she had eight ports on the main, or lower, deck where the oar-ports were, four forward and four aft of the oar-ports. So far so good; obviously that is where the heaviest guns would be and, as a point of interest, she carried six guns to eight ports. Contemporary authorities give the length of barrel of a demi-culverin as between 10 and

11 ft., some one dimension, some the other.

"The Gunner" by Norton 1628 and "Military and Maritime Discipline" by Venn 1672, are two authorities on the size of guns of that period, and go into the fullest detail. Here I came up against trouble—the scale width across the deck between the two forward ports was about 4 in., between the next two ports aft, just over 5 in., the width of deck between the two aftermost ports was the same.

A barrel 10 ft. long, taking the shorter length, will be 2½ in. scale. With a gun on each side of the ship, as there obviously would be, I don't see how guns with barrels this length could be run back to load, so something was wrong somewhere, yet the various measurements are contemporary and correct.

Charles Galley and her sister ship the *James Galley* were designed and built as what were described as Q ships during the first world war. The Algerian pirates were giving a lot of trouble by waiting for merchant ships to be becalmed off the coast of Africa and then rowing out and looting them at their leisure, since there are few things more helpless than a sailing ship becalmed.

With their ports closed, these two small ships would look like merchant

ships. Actually they were comparatively heavily-armed warships with 20 oar-ports a side, and so were able to bring their guns to bear in any weather. The sweeps, by the way, were manned by Thames watermen and not by naval ratings. The two ships were very successful, caused considerable alarm and despondency among the pirates, and discouraged robbery in those parts for some time.

It is likely that the pirates would attack with more than one galley, and on both sides. Imagine trying to fight two guns with 10 ft. barrels with 20 ft. or less between the two ports (about 16 in the case of the fore and aftermost ports).

It does not seem possible, the more so since one can't imagine the gunners saying "after you, Cecil," when it came to reloading in the heat of action. The draft is correct, the armament is correct, the size of the guns is given in the utmost detail by contemporary authorities who were practical gunners, so where is the nigger in the woodpile?

Here my notebook came in. Under G I found, among other things:

"Culverin—length 8 ft. to 13 ft.

"The short culverin would be the ordinary long gun cut down for naval use.

"After the Armada the most popular guns, i.e. culverins and

demi-culverns, were cut down in length."

Granted that the article is on guns of the Elizabethan period, but *Charles Galley* had the same guns, i.e. demi-culverins, sakers and falcons (three-pounders) but the important point is that such long barrels were impractical on board ship and consequently were cut down. When I read the article I was not concerned with guns, but made the note as being likely to come in useful, as indeed it did.

This seems to be the answer—common sense—and just what seamen would do. Anyway that is the solution I took; there is the evidence to support it, and the professors can argue it out as they like.

"Engage the enemy more closely" was a standing signal in the Navy before rifled ordnance and breech-loaders came in. The guns were remarkably inaccurate and, after all, if one had to drag the things in, reload, and then pull them out again, one might as well have the satisfaction of knowing that the missile would go where it would do most harm and not into the sea. Cutting down would make the guns handier and not make much difference to their accuracy. Later on carronades were to become quite popular.

● *To be continued.*

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SAILS for Model Yachts. All classes. Terylene, Egyptian Cotton. Quotation from ROBERTS, 14, Saxon Road, Hove, Sussex.

WARSHIP DRAWINGS now available from Norman A. Ough, 98, Charing Cross Road, London, W.C.2. (TEMPLE BAR 3926.) Scale 1" = 16' (detail 1" = 8'). DESTROYERS: "V" class VEGA (1916-45) 12s. 6d. "D" class DARING (1934), £1. "Tribal" class MATABELE (1936), £1. "Battle" class CADIZ, £1. CRUISERS: DIDO (1939-56), £1. "Lines" of DIDO, 10s. "Cardiff" class CURACOA, £1. SHEFFIELD (as in 1956), £1. "Lines" of SHEFFIELD, 10s. "Algerine" class minesweeper (1" = 8') MARVEL, 10s. "Lines" of MARVEL, 10s. CORVETTE HEDDINGHAM CASTLE (1" = 8'), £1. SUBMARINES: (all 1" = 8'), E29, L52 and "O" class OLYMPUS, 10s. each. BATTLE-CRUISER: LION (1" = 16') as at Jutland, £1. "Lines" 10s. "K" class destroyer KASHMIR (½" = 1'), £1. "Lines" 10s.

SUBMARINE PARTS, FITTINGS, instruments wanted by museum.—SUMMERS, Red Lion, Henley, Oxon.

26' x 8' 4" PASSENGER LAUNCH, M.O.T., 37 persons, strong carved built 1949, Parsons 10/20 pet./par. engine, ready for service, full equipment, ideal for conversion, £650; another 22 x 7' 6" strong carved built, 1949, M.O.T. 22 persons, Handy Billy pet./par. engine, real single hander, suitable for fishing or conversion, full equipment, ready for service, £450.—G. H. JOHNS, 29, Hinguar Street, Shoebury-ness.

CHRISTCHURCH PROFESSIONALLY CONVERTED GUN BOAT, good accommodation, partly furnished, main water, electricity, frig, cooker, immersion heater, bath. £1,000, h.p. considered.—FOREST SIDE, Hightown Hill, Ringwood.

BY APPLYING A REINFORCED PLASTIC "SKIN" to your leaking boat, you can eliminate annual caulking, painting, etc., the "skin" can be self coloured, is resistant to marine growths and does not involve complicated formulas. If your boat is leaking and you wish to cure this, and, incidentally, gain many other advantages, you are invited to write NOW for details enclosing 1s. for leaflet and postage.—MARINE DIVISION, AUTOMOBILE PLASTICS CO. LTD., 62, High Street, Barnet, Herts.

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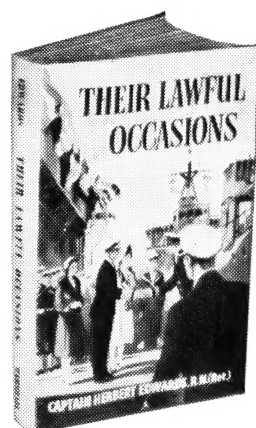
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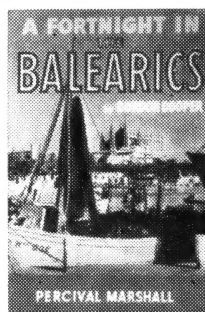
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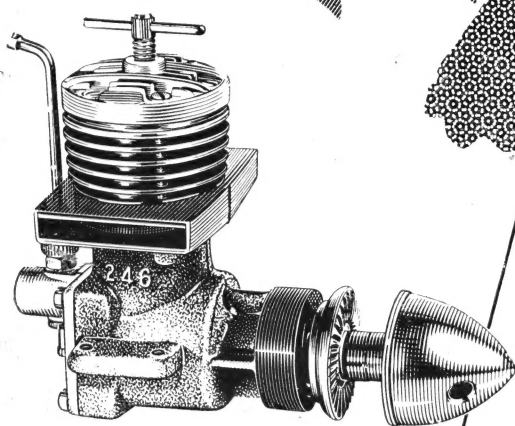
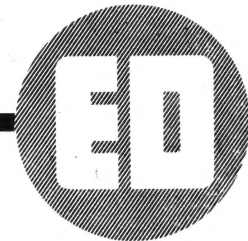
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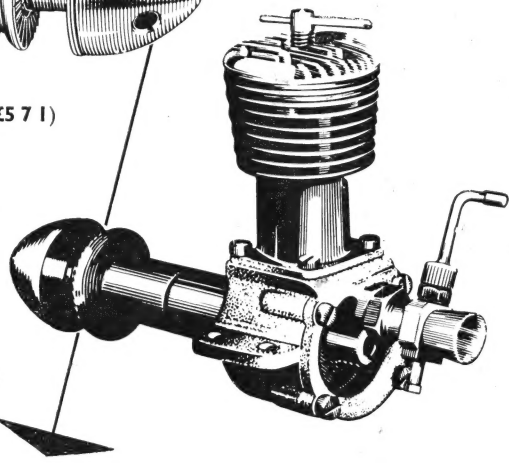
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